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NARRATIVE REPORT
BENSON WETLAND MANAGEMENT DISTRICT
BENSON, MINNESOTA
CALENDAR YEAR, 1971

PERMANENT PERSONNEL

| | |
|---|-------------------|
| James J. Hubert, Project Leader, GS-12 | 1-1-71/12-31-71 |
| Jack C. Womble, Assistant Wetland Manager, GS-9 | 1-1-71/12-31-71 |
| John T. Hutchinson, Biological Technician, GS-5 | 1-1-71/12-31-71 |
| Roger H. Nelson, Maintenanceman, WG-6 | 1-1-71/12-31-71 |
| Evonne T. Mikkelsen, Clerk-Steno, GS-4 | 1-1-71/10-9-71 |
| Inga Mae B. Urke, Clerk-Steno, GS-4 | 10-10-71/12-31-71 |

TEMPORARY PERSONNEL

| | |
|--------------------------------------|-----------------|
| John G. Almquist, Jr., Laborer, WG-2 | 7-1-71/10-29-71 |
| Frederick W. Fuhrmann, Laborer, GS-4 | 6-14-71/9-13-71 |
| Bess T. Olson, Laborer, WG-2 | 7-1-71/9-18-71 |
| Richard L. Wayne, Laborer, WG-2 | 7-1-71/9-18-71 |

ANNUAL NARRATIVE REPORT
BENSON WETLAND MANAGEMENT DISTRICT
JANUARY - DECEMBER, 1971

I. GENERAL

A. Description of the Area

The Benson Wetland Management District with an office located at Benson, Minnesota, was established in October 1964 to serve an area of eleven counties of West-central and South-central Minnesota. The extent and location of the Wetland District in relation to the state is reflected on the map which follows. "The Federal Guide to Waterfowl Production Areas" attached to the back cover of this report pin-points individual management units. Management units range in size from 6 to 878 acres.

The District lies on the eastern margin of both the Great Plains and the duck factory (prairie pothole) region of the upper midwest. The topography varies from flat agricultural type land to rolling grassland. The transition zone between plains and forest is locally evident. Found throughout the region are signs of past glaciation.

B. Status of the Acquisition Program

1. Fee Title Program

Acquisition in the Benson Wetland Management District is nearing completion. The Benson Wetlands Office was recently incorporated as a substation of the Fergus Falls Wetlands Office. Also, a staff reduction has occurred. Remaining acquisition operations will be largely directed toward systematic negotiations for roundout of existing projects. Although the Benson Wetlands Office is being phased out, limited purchases should continue until June 30, 1976. This date marks the end for acquiring wetlands as provided by the Wetland Program Extension Bill of December, 1967.

Acquisition toward the goal acreage of 59,900 is now 79 per cent complete. A goal of 330 management units seems realistic with present emphasis on roundouts.

Table I, "Fee Title Acquisition Status" and Table II, "Fee Title Acquisition Trend" reflect trends of the fee title program from 1965 through 1970. The option date of the purchase agreements was used as the breaking point for preparing these tables.

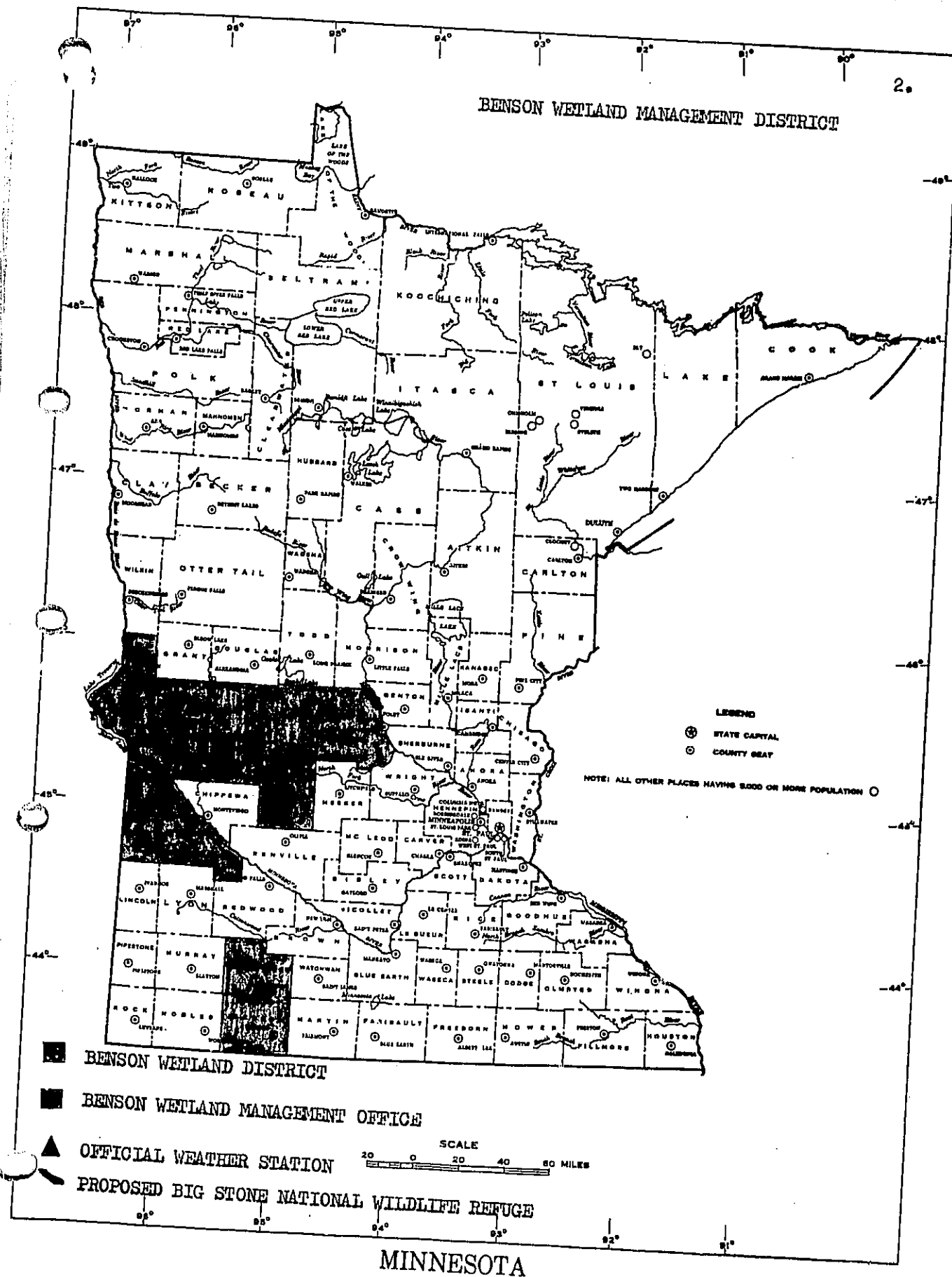


TABLE I
FREE TITLE ACQUISITION STATUS

| County | 1969 | | 1970 | | 1971 | |
|-----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| | No. Mgt. Units | Optioned Acres | No. Mgt. Units | Optioned Acres | No. Mgt. Units | Optioned* Acres |
| Big Stone | 54 | 7,344.42 | 56 | 7,525.92 | 58 | 7,929.27 |
| Cottonwood | 6 | 838.45 | 7 | 932.00 | 7 | 932.00 |
| Jackson | 10 | 1,352.17 | 10 | 1,420.17 | 12 | 1,872.47 |
| Kandiyohi | 42 | 6,505.39 | 46 | 7,307.91 | 49 | 7,534.91 |
| Lac qui Parle | 13 | 2,009.77 | 14 | 2,301.95 | 14 | 2,301.95 |
| Pope | 50 | 7,194.26 | 57 | 8,318.33 | 60 | 8,659.73 |
| Stearns | 20 | 2,581.41 | 29 | 4,545.05 | 34 | 4,958.10 |
| Stevens | 46 | 5,016.87 | 50 | 5,477.87 | 54 | 6,031.32 |
| Swift | 24 | 4,742.46 | 25 | 4,972.06 | 26 | 5,052.06 |
| Traverse | 7 | 1,669.62 | 9 | 2,036.37 | 9 | 2,036.37 |
| Yellow Medicine | 2 | 70.00 | 2 | 70.00 | 2 | 70.00 |
| TOTALS | 274 | 39,324.82 | 305 | 44,907.63 | 325 | 47,378.18 |

*Includes Lease-Option Agreements converted to purchase options.

TABLE II
FREE TITLE ACQUISITION TREND

| Year | No. Mgt. Units | Increase | Optioned Acres | Increase | Ave. Acres Acquired/mo. |
|------|----------------|----------|----------------|----------|-------------------------|
| 1965 | 141 | -- | 20,296.90 | -- | 800 |
| 1966 | 175 | 34 | 26,296.90 | 6,000.00 | 500 |
| 1967 | 205 | 30 | 31,044.72 | 4,747.82 | 395 |
| 1968 | 241 | 36 | 34,327.64 | 3,282.92 | 274 |
| 1969 | 274 | 33 | 39,324.82 | 4,997.18 | 416 |
| 1970 | 305 | 31 | 44,907.63 | 5,582.81 | 465 |
| 1971 | 325 | 20 | 47,378.18 | 2,470.55 | 206 |

The number of tracts acquired has decreased from 77 in 1970 to 51 in 1971. Particularly, the last half of the year showed a decline. Table II reflects a substantial decrease in total acres purchased. Also, Table II indicates that 206 acres per month were acquired, less than half of the previous years figure. A noted decrease also occurred in the creation of new units. It is obvious that acquisition in this district has reached the final stage.

2. Easement Program

Only three easement agreements were consummated in 1971. The easement program has not been successful in Minnesota primarily due to high land values, emphasis on drainage and lack of public acceptance. Trends of the program are reflected in Table III, "Easement Acquisition Status".

| TABLE III | | EASEMENT ACQUISITION STATUS | | | | | |
|-------------|-----|-----------------------------|--|-------------|-----------|------|---------------------|
| | | 1969 | | 1970 | | 1971 | |
| County | No. | | | No. | | No. | |
| Big Stone | 109 | 15,641.83 | | 110 | 15,741.83 | 110 | 4,437.00 15,741.83 |
| Cottonwood | No | easements | | being taken | | | |
| Jackson | No | easements | | being taken | | | |
| Kandiyohi | 85 | 10,205.27 | | 85 | 10,205.27 | 85 | 3,033.00 10,205.27 |
| L.Q.P. | 2 | 240.00 | | 2 | 240.00 | 2 | 141.00 240.00 |
| Pope | 120 | 20,338.13 | | 123 | 20,886.30 | 126 | 5,558.00 21,368.20 |
| Stearns | 6 | 995.26 | | 6 | 995.26 | 6 | 292.00 995.26 |
| Stevens | 14 | 1,426.64 | | 14 | 1,426.64 | 14 | 435.00 1,426.64 |
| Swift | 14 | 1,341.52 | | 14 | 1,341.52 | 14 | 399.00 1,341.52 |
| Traverse | 21 | 3,101.04 | | 21 | 3,101.04 | 21 | 995.00 3,101.04 |
| Yellow Med. | 1 | 80.00 | | 1 | 80.00 | 1 | 17.00 80.00 |
| TOTALS | 372 | 53,369.69 | | 376 | 54,017.86 | 379 | 15,307.00 54,499.76 |

C. Weather Conditions

The new year began with limited snow cover, strong winds and very cold temperatures which sent the frost deeper than usual. As of January 8th there was no snow cover except in the shade. On January 29th and February 26th the district was subjected to two severe blizzards.

High temperatures in late February caused early melting of the limited snow accumulation. This was followed by average temperatures and insignificant rainfall which resulted in drier than usual conditions. However, during the last week of May the tide changed, when showers began and continued intermittently into the summer period.

The summer brought normal temperatures. Abundant precipitation was received during June, followed by a very dry period in July and seasonal moisture evolving in August. No significant storms occurred around the district during the season.

TABLE IV

1971 WEATHER - PRECIPITATION

| Month | Willmar | Morris | Benson | Canby | Windom | Average |
|----------------|---------|--------|--------|--------|----------|---------|
| January | .89" | 1.18" | 1.27" | .27" | .39" | .80" |
| February | 2.50 | 1.63 | 2.03 | 1.67 | 2.15 | 2.00 |
| March | .31 | .31 | .39 | .17 | 1.23 | .48 |
| April | 1.36 | 1.61 | 1.10 | 1.27 | .82 | 1.23 |
| May | 3.06 | 2.18 | 2.70 | 1.06 | 2.35 | 2.27 |
| June | 8.84 | 7.62 | 6.55 | 7.98 | 7.22 | 7.64 |
| July | 3.10 | 2.09 | 2.03 | 1.92 | * | 2.29 |
| August | 1.85 | 4.54 | 2.21 | 3.30 | .47 | 2.47 |
| September | 2.91 | 2.05 | 1.45 | 1.47 | 1.29 | 1.83 |
| October | 5.69 | 7.11 | 8.19 | 4.24 | 4.40 | 5.93 |
| November | 2.76 | 2.52 | 3.05 | 2.99 | 2.25 | 2.71 |
| December | .13 | .32 | .35 | .43 | .86 | .42 |
| ANNUAL TOTAL | 33.40" | 33.16" | 31.32" | 26.77" | 23.43*** | 30.07" |
| ANNUAL NORM*** | 24.47" | 22.58" | 28.22" | 26.95" | 30.04" | 28.06" |

*Data not available

**Total does not include July

***Annual norms for Willmar and Morris are based on period of 1931-1960. Annual norms for Benson and Canby are based on period of 1966-1971 and for Windom 1966-1970 period.

TABLE V

1971 WEATHER - TEMPERATURE

| Month | Willmar | Morris | Benson | Canby | Windom |
|-----------|-----------|-----------|-----------|-----------|-----------|
| | Max : Min | Max : Min | Max : Min | Max : Min | Max : Min |
| January | 33 : -22 | 33 : -25 | 32 : -24 | 36 : -18 | 39 : -16 |
| February | 45 : -22 | 45 : -23 | 46 : -27 | 50 : -18 | 48 : -21 |
| March | 64 : -11 | 60 : 1 | 65 : -2 | 70 : 2 | 69 : -4 |
| April | 77 : 15 | 76 : 15 | 77 : 16 | 83 : 8 | 80 : 17 |
| May | 86 : 33 | 86 : 30 | 88 : 29 | 87 : 27 | 87 : 29 |
| June | 95 : 49 | 94 : 46 | 97 : 47 | 98 : 47 | 97 : 49 |
| July | 90 : 47 | 90 : 40 | 91 : 41 | 96 : 42 | * : * |
| August | 95 : 45 | 97 : 45 | 97 : 45 | 100 : 39 | 95 : 42 |
| September | 92 : 34 | 91 : 33 | 93 : 32 | 96 : 34 | 96 : 31 |
| October | 81 : 27 | 80 : 26 | 74 : 26 | 78 : 25 | 84 : 25 |
| November | 57 : 2 | 55 : 2 | 58 : 1 | 63 : 3 | 64 : 5 |
| December | 35 : -13 | 35 : -14 | 36 : -13 | 41 : -10 | 38 : -11 |
| EXTREMES | 95 : -22 | 97 : -25 | 97 : -27 | 100 : -18 | 97 : -21 |

Last killing frost of spring - 5/26/71
First killing frost of fall - 9/18/71

*Data not available

The fall was a period of excessive rainfall. Six inches of rain fell in the Benson area in four to five days. Marshes and streams were overflowing and the soil was saturated similar to a spring thaw. Although the first killing frost occurred earlier this year, the temperatures remained mild through the season.

As the end of the year approached, the first snowfall came on Thanksgiving Day. Twelve inches were received in the Benson area. This was followed by bland temperatures and intermittent light snow. By the end of 1971, frost still had not moved appreciably into the ground as a result of light snow cover and mild temperatures.

D. History of Past Use

This region of Minnesota was inviolate until 1862. With the passage of the Homestead Act and construction of the railroad, immigrants rapidly settled the area and began farming.

The region is primarily agricultural with corn and beans as prevailing crops. Nearly all land, regardless of capability, has been tilled at one time. All types of erosion are evident as a result. Early landowners believed only in reaping the resources with little thought of conserving for the future.

The terrific demand for farmland in the 1940's and 1950's caused many thousands of wetlands to be destroyed in the name of conservation. Greater emphasis on true conservation in recent years has resulted in at least a beginning to better land use.

The wetland management units are beginning to contribute to the area economy. Although the degree of economic relation may be small with grazing units and small farmland tracts, it is an accepted fact that wildlife related recreation is drawing many dollars into the local communities.

E. Habitat Conditions

1. Precipitation received for the year was above the average. However, due to insufficient spring runoff and tardiness of rainfall, spring nesting conditions were somewhat lacking in quality. In late May and June water levels improved rapidly, thus creating an abundance of excellent brooding habitat. Then again in July moisture was wanting, particularly in the western part of the district. Although some type III marshes went dry, waterfowl suffered very little.



Wetland habitat destruction on private land continues.
 Outlet ditch is located in upper right portion of the photo.
 Big Stone County.
 71, Slide, 10/20 J. J. H.

Excessive precipitation occurring during the fall re-stored water to optimum levels. Provided normal amounts of precipitation are received this winter, excellent waterfowl nesting habitat should evolve in 1972. The abundance of fall moisture has also allowed for nearly filling of water basins where 49 ditches and tiles were plugged during September and October 1971. Thus their availability for waterfowl use in 1972 is assured.

2. Food and Cover

As might be expected, weather was the major factor influencing the quality and quantity of food and cover. The year of 1971 was in general a bountiful year for both wildlife food and cover. Although moisture was lacking in early spring and during July, vegetation was normal.

Food was in good supply and quality on both uplands and wetlands. Rainfall was favorable for an abundant growth of smartweed and other aquatics. Additional corn was made available for wildlife on WPAs this winter by establishing 14 new food plots. A total of 74 plots are now scattered throughout the district providing 182 acres of standing corn. Also, more food was left usable because

wet conditions delayed and discouraged farmers from harvesting, burning and plowing last fall. Clear cuttings in tree stands dominated by aspen during early spring 1971, created 6 acres of food for deer and grouse.

Cover was adequate for wildlife throughout the year. In 1971, 1241 acres of cropland were seeded to permanent covers of legumes and mixed native grasses. The inclusion of sweetclover in many corn food plots and deferred plowing from spring to fall should provide some good quality cover for 1972. More cover remained available at the close of 1971 because excessive moisture during the fall caused a decrease in plowing and burning. Limited snow accumulation left more cover open than usual during both winters.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl - (Anseriformes)

A lesser scaup, possibly having trouble with his navigational equipment or being high-jacked, arrived in the Benson District on March 14 and became the first waterfowl to be seen in 1971.

After a winter of relatively little moisture, breeding conditions at the onset of the season were below the quality hoped for, especially in the western half of the district. Our pair counts showed a decided decline from 1969 and 1970. Conditions improved rapidly, but it is believed that many potential nesters moved further north and west.

| TABLE VI | | BREEDING PAIR SUMMARY, BLOCK COUNTS | | | | | | |
|-------------|---------|-------------------------------------|----------|-----------------|----------|---------------------|------------|----------|
| | | :Total: Water : | | :Study: Basin : | | : Pairs (duck-coot) | | |
| Unit | | :Acres: | Acres : | 1968 : | 1969 : | 1970 : | 1971 | Average* |
| Evenson | : 140 : | 49 : | 30-0 : | 29-12 : | 14-3 : | 10-6 : | 19.4-4.6 | |
| Christenson | : 455 : | 124 : | 19-0 : | 22-3 : | 28-0 : | 26-0 : | 23.4-.6 | |
| Mamal | : 640 : | 256 : | 88-25 : | 171-42 : | 161-36 : | 113-40 : | 118.6-30 | |
| Total | :1245 : | 430 : | 137-25 : | 222-57 : | 203-39 : | 149-46 : | 161.4-35.2 | |

*1967 thru 1971

| TABLE VII BREEDING PAIR SUMMARY, SPECIES COMPOSITION | | | | | | | | | |
|--|------------------------------------|---------|---------|---------|-------|------|------|------|------|
| Species | : Christ- : : : Species Percentage | | | | | | | | |
| | Evanson | Evanson | Evanson | Evanson | Total | 1968 | 1969 | 1970 | 1971 |
| Mallard | 2 | 5 | 16 | 23 | 8.0 | 10.3 | 13.8 | 15.4 | |
| Gadwall | - | - | 4 | 4 | .7 | 4.5 | 3.4 | 2.6 | |
| Widgeon | - | - | 2 | 2 | 0 | .4 | 1.0 | 1.4 | |
| Wood Duck | - | 7 | - | 7 | 3.6 | .8 | 3.4 | 4.6 | |
| Blue-wing | 8 | 13 | 58 | 79 | 57.6 | 59.4 | 51.6 | 53.2 | |
| Green-wing | - | - | 2 | 2 | 1.4 | 0 | 3.4 | 1.4 | |
| Shoveler | - | - | 1 | 1 | 2.1 | 4.0 | 1.5 | .6 | |
| Pintail | - | - | 4 | 4 | .7 | 4.5 | 4.4 | 2.7 | |
| Redhead | - | - | 12 | 12 | 8.7 | 7.2 | 6.8 | 8.1 | |
| Canvasback | - | - | - | - | 0 | .4 | 0 | 0 | |
| Lesser Scaup | - | - | - | - | 0 | 0 | 3.8 | 0 | |
| Ruddy Duck | - | - | 14 | 14 | 15.3 | 7.6 | 6.4 | 9.4 | |
| Ring Neck | - | 1 | - | 1 | 1.4 | .4 | .5 | .6 | |
| TOTAL | 10 | 26 | 113 | 149 | | | | | |

The brood transects were censused for the fifth year. The transects are 42 miles and 53.7 miles in length respectively. Each transect was run twice. Marsh conditions were good to excellent, improving greatly since the pair counts were taken. During the second brood run vegetation was lush and visibility very limited. Production of dabblers and divers was below the average of past years, while coot production was slightly higher.

| TABLE VIII BROOD SURVEY SUMMARY | | | | |
|---------------------------------|------------------------------------|------------|------------|-----------|
| | Broods (Transect #1 - #2 - total)* | | | |
| | 1969 | 1970 | 1971 | Average** |
| Dabblers | 27-23-50 | 14-19-33 | 18-9-27 | 26-19-45 |
| Corrected Dabblers | 78-53-131 | 25-46-71 | 35-13-48 | - |
| Divers | 3-9-12 | 6-1-7 | 4-6-10 | 3-4-7 |
| Corrected Divers | 5-12-16 | 8-2-10 | 4-6-10 | - |
| Tot. Div. & Divers | 30-32-62 | 20-20-40 | 22-15-37 | 29-20-49 |
| Corrected Total | 83-65-147 | 33-48-81 | 39-19-58 | - |
| Coots | 98-48-146 | 21-37-58 | 67-12-79 | 48-23-71 |
| Corrected Coots | 243-79-322 | 58-126-184 | 156-34-190 | - |
| Basin Acres | 1456 | 1456 | 1456 | 1429 |

*Two counts each transect

**Average for 1967 thru 1971

Arriving at accurate production estimates in a wetland district is difficult due to the wide scattering of units over eleven counties, differences in climate, terrain, etc.. With these factors in mind, we are using the following method to arrive at what we feel are reasonable estimates: one half duck per easement wetland acre and one duck per optioned wetland acre. This method is the same as used in refuge objective calculations. Using this method, our production estimate for 1971 is 24,475.

The fall migration was late in arriving, but unlike so many previous years, it was greeted by open water and ideal field feeding conditions. The birds were reluctant to leave the district and hunters were generally pleased with their attempts in the fields and marshes. On November 5th a hard freeze occurred, but lasted only a day or two with final freeze-up just before the close of the hunting season on November 20th. Mallards seemed more abundant locally. Flocks of Canada, blue, and snow geese remained in the district longer than usual. Whistling swans were present in good numbers in both spring and fall migrations. A flock of 115 swans was seen a few miles north of this station on April 6, feeding in flooded fields.

2. Water and Marsh Birds - (Caviformes, Ciconiiformes, Columbiformes, Gruiformes and Pelicaniformes)

Common throughout the district are great blue herons and American egrets. Our Lovell Lake Unit in Stearns County plays host to a large nesting colony of great blues. American bitterns, least bitterns, and black crowned night herons are observed regularly. Green herons seem to be increasing in number. King and yellow rails are probable inhabitants of the district, but no sightings have been confirmed to date.

The major ingredient for the Frenchman's delight, "Sautied Mudtlen"; coot were again abundant over most of the district. Pied-billed grebes nest on many of the units. Loon sightings are rare, but they are known to migrate through the area.

Double-crested cormorants are frequent visitors to many units with open water marshes. White pelicans are common during migration, some remaining most of the season.

3. Shore birds, gulls and terns - (Charadriiformes)

Sandpipers, yellow-legs, plovers, godwit and phalarope are residents of the district. The "winnowing" of Wilson's snipe is heard during the warm months. A small population of woodcock is known to exist in the eastern part of the district.

Gulls; herring, franklins, and ring-billed, in large flocks, are seen following the plow and use many of our units as resting areas. Forsters, common, and black terns add their serenity and grace to the landscape.

4. Doves (Columbiformes)

Mourning doves are common residents. Their familiar ooo and whistling wings can be heard from one end of the district to the other. Again this year they were cooperative with our banding program and this is covered in Section V.

B. Upland Game Birds (Calliformes)

The pheasant population in the district remained about the same or improved slightly over 1970. Luckily the past two winters have been relatively mild, but if friend pheasant is to have a chance for survival throughout the pheasant range, cover conditions must be improved. Another winter like 1968-1969, with present cover conditions, could possibly write finis to Phasianus colchicus in most of Minnesota.

Our random sex-ratio count during the 1970-71 winter season involved 125 pheasants for a ratio of 1.05 males : 1.00 females. The 1966-67 ratio was .54 : 1.00, in 1967-68 it was .83 : 1.00, in 1968-69 it was 1.05 : 1.0 and in 1969-70 it was 1.57 : 1.00.

A few units in the eastern fringe of the district harbor a small population of ruffed grouse. Flocks of hungarian partridge are occasionally seen and appear to be on the increase.

C. Other Birds (Falconiformes, Strigiformes, Passeriformes)

Bald eagles, golden eagles and ospreys are seen on occasions during migration. The hawk family is well represented at least as visitors. Marsh, red-tailed, red-shouldered, goshawk, rough-legged and sparrow hawks have all been noted on our units. Great horned owls are common in the area. Barred, screech, snow, barn and long eared owls are occasional visitors.

Crows and belted kingfishers are common warm season residents. Some crows remain year around. Perching birds are abundant in the district with many species being present.

D. Big Game Animals

The only resident big game animal in the district is the white-tailed deer. Our units with dense marsh vegetation are favorite haunts for deer in the district. Although Minnesota had no open gun season on deer this year, the population is good in our area. We estimate that about 1200 frequent our units.

The unusual wanderings of a slightly mixed up moose gave us an unusual visitor this year. The moose was first sighted in the northern portion of the district in late summer. Subsequent reports indicated that he moved completely through the district, south to the Minnesota River, then southeasterly along the river bottom. The last sighting was near Mankato, Minnesota.

E. Fur Animals, Predators, Rodents and Other Mammals

The muskrat population remains good to excellent over most of the district. Rat cabins on some units were numerous to the point of crowding. Mink numbers remain good and seem to correspond to muskrat density.

Beaver are common throughout the area. Four of our units have known resident colonies.

The red-fox population seems to be declining. High pelt prices are encouraging more hunters and trappers to intensify their pursuit of brer fox, consequently diminishing the supply. The raccoon population remains good over most of the district.

Cottontail rabbits, jack rabbits, fox squirrel and gray squirrel are common. Thirteen-lined ground squirrel, Franklin's ground squirrel, pocket gopher, and chipmunk are abundant.

F. Rare, Endangered and Status Undetermined Species

There are no threatened species known to exist in the district.

G. Fish

Only two units in the Benson Wetland District are known to have fair to good fish populations, bullheads and northern pike the predominant species present. Most other marshes

are too shallow to overwinter fish. Because of this, rough fish pose few problems on our areas. A few units do have streams meandering through them and one or two units have ponds with a depth capable of sustaining fish life, but no attempt has been made to census fish life on these areas.

III. DEVELOPMENT AND MAINTENANCE

A. Physical Development

A wet fall season and funds limitations slowed up our most effective developmental activity; ditch plugging. A total of 33 ditch plugs were placed in addition to leveling 8 building sites, plugging 14 tile lines, building 4 nesting islands and repairing 2 ditch plugs. Each of the plugs and building sites were seeded to a mixture of rye and alfalfa. An inroad and parking lot was established on the Froland Unit to handle foot trail visitors. A lot of work remains to be done.

Extensive junk cleanup around old building sites was accomplished on eleven units in Kandiyohi, Pope, Stevens and Swift Counties requiring 22.6 man days of labor. All parking lots were mowed and trash barrels dumped prior to the opening of duck season.

The large routed sign on the Artichoke Unit was replaced and the standards re-stained. The entire sign assembly was re-stained at headquarters and on the Rice Unit. Two desks, a glass desk-top and a chair were acquired on transfer from the Benson Wetlands Office.

Boundary posting was again extensive with 46 tracts involved on 36 units. Approximately 600 signs and posts were used.

Numerous food plots were measured and marked and several tracts that weren't surveyed were measured and marked. Many hours were spent throughout the year replacing damaged signs and posts, repairing fences and facilities, maintaining vehicles and in headquarters upkeep.

A total of 972 rods or 3.03 miles of new fencing was constructed in 1971 while 3451 rods or 10.78 miles of old fencing was removed. The major physical projects are summarized in Table IX.

B. Plantings Including Soil and Moisture

1. Trees and Shrubs

Tree and shrub plantings were completed on the Dismal (2 plots), Kopitzke, Olson Lake and Quinn Units.

Evergreen additions were made to the Kelly and Weber Units. Preparations are underway for plantings on at least six other units in 1972. The Minnesota Department of Natural Resources has been exceptionally helpful with these plantings.



Acceptance and use of parking lots was good, resulting in better public control and protection of the habitat.

Miller Unit, Stevens County
71, Slide, 10-2, J. J. H.

2. Grasslands

Permanent cover was established on 1241 acres. Of this total 256 acres were seeded using our own Nisbet drill by force account. A summary of the 1971 seeding may be found in Table X.

C. Cultivated Crops

Food plots for wildlife are being established on all units containing suitable cropland. In 1971 a total of 74 management units had food plots established thereon. More additions will be made in 1972. These corn plots vary from 6-10 acres mainly and involve cropping rotations where at all possible to maintain fertility levels.

TABLE IX

MAJOR PHYSICAL PROJECTS

| County | Unit | Project | Remarks |
|------------|------------|---|--------------|
| Big Stone | Curran | Parking Lot 1 | F, 2.0 md |
| | Menzell | Parking Lot 1 | F, 2.0 md |
| Cottonwood | Pankonin | Fence 342 rods | C, \$410.40 |
| | Pankonin | Fence Removal 504 rods | C, \$504.00 |
| Jackson | Kilen | Fence Removal 1134 rods | C, \$1134.00 |
| Kandiyohi | Allen | Fence 80 rods | CA, Material |
| | Evenson | Parking Lot 1 | F, 4 md |
| | Kelly | Fence 90 rods | CA, Material |
| | Sonstegard | Fence Removal 280 rods | F, 8 md |
| Pope | Berglund | Ditch Plug 1 | C |
| | Elder | Parking Lot 1 | F, 6.5 md |
| | Evjen | Parking Lot Expansion | F, 1.5 md |
| | Froland | Park Lot & Inroad for Nature Trail | C |
| | Gjerdingen | Fence Removal 35 rods | F, 1.5 md |
| | Gorder | Bldg. Site Leveling 1 | C |
| | Gullickson | Ditch Plug 2, Junk Pile 1 | C |
| | Hagen | Parking Lot 1 | F, 7.5 md |
| | Staack | Parking Lot Expansion 1 | F, 3.0 md |
| | Stammer | Ditch Plug 1, Bldg. Site Leveling 1 | C |
| | Stewart | Parking Lot 1 | F, 4.0 md |
| | Allen | Building Site Leveling 1 | C |
| Stevens | Edwards | Repair Ditch Plugs 2 | C |
| | Golden | Ditch Plug 1, Junk Pile 1 | C |
| | Greiner | Tile Plugs 2 | C |
| | Hubert | Ditch Plug 1, Partial Bldg. Site Leveling 1 | C |
| | Lamprecht | Bldg. Site 1 | C |
| | Mero | Ditch Plug 1, Tile Plug 8, Bldg. Site Leveling 1, Nesting Islands 4 | C |
| | Miller | Ditch Plug 1 | C |
| | Miller | Parking Lot Expansion 1 | F, 4.0 md |
| | Nordby | Bury Junk Pile 1 | C |
| | Staples | Ditch Plug 1 | C |
| | Strubbe | Ditch Plugs 4, Bldg. Site Leveled 1 | C |
| | Struck | Ditch Plugs 3 | C |
| | Telkamp | Ditch Plugs 2 | C |
| | Wente | Ditch Plugs 3 | C |
| | Wente | Fence 460 rods, Fence Removal 448 rods, Parking Lot 1 | F, 50.0 md |

TABLE IX MAJOR PHYSICAL PROJECTS (Continued)

| | | | |
|-------|-------------|--|------------|
| Swift | Lindahl | Fence Removal 450 rods | F, 22.0 md |
| | Rheingans | Ditch Plugs 11, Tile Plugs 4, Bury Junk Piles 2 | C |
| | Rice | Fence Removal 120 rods, Park Lot F, | 7.0 md |
| | Spring Lake | Fence Removal 360 rods & Bldg. | |
| | | Site Cleanup | F, 24.0 md |
| | Spring Lake | Bldg. Site Leveling | C |
| | Welsh | Fence Removal 120 rods | F, 1.5 md |

C = Contract

CA = Cooperative Agreement

md = 8 hour mandays

F = Force Account



Marsh recently restored by ditch plug in center of background.
Edwards Unit, Stevens County.
71, Slide, 10-6, J. J. H.

Resident wildlife make very high use of these plots and returning waterfowl in the spring often harvest what is left.

The alternate row harvest system is used to avoid the problem of the operator leaving the poorest corn for our share. In this system the operator harvests 8 rows and leaves 4 rows alternately across the field. A fair sharing is assured and drifting snow seems to spread itself over the plot rather than inundating portions of the field. Corn ears are left exposed for wildlife use as a consequence.

TABLE X
GRASSLAND SEEDING SUMMARY

| County | Tract | Acres Seeded | Mixture & Rate/Acre | Method | Date Seeded |
|------------|-------------|-----------------|------------------------|-----------|----------------|
| Big Stone | Bauman | 4 | A - 10 lbs. | Sharecrop | Spring |
| Big Stone | Hanson | 60 | A - 10 lbs. | Sharecrop | Spring |
| Big Stone | Subak | 60 | A - 10 lbs. | Sharecrop | Spring |
| Big Stone | Subak | 40 | B - 10 lbs. | Nisbet | 4/20/71 |
| Cottonwood | Butte | 24 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Carlson | 5 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Fisher | 30 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Gilberts | 9 | A - 10 lbs. | Sharecrop | Fall |
| Kandiyohi | Gunnafson | 10 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Imsdahl | 8 | B - 10 lbs. | Nisbet | 5/13/71 |
| Kandiyohi | Klint | 8 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Norling | 8 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Skare (159) | 40 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Skare (163) | 15 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Skare | 11 | B - 10 lbs. | Nisbet | 5/11/71 |
| Kandiyohi | Strandberg | 20 | A - 10 lbs. | Sharecrop | Spring |
| Kandiyohi | Whitcomb | 20 | B - 10 lbs. | Nisbet | 5/14/71 |
| Pope | Gordar | 12 | A - 10 lbs. | Sharecrop | Spring |
| Pope | Mosier | 15 | B - 10 lbs. | Nisbet | 5/26/71 |
| Pope | Brandby | 47 | B - 10 lbs. | Nisbet | 5/12/71 |
| Pope | Brandby | 77 | A - 10 lbs. | Sharecrop | Spring |
| Stearns | Middendorf | 4 | A - 10 lbs. | Sharecrop | Spring |
| Stearns | Whitney | 29 | B - 10 lbs. | Nisbet | 5/17/71 |
| Stearns | Whitney | 40 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Allen | 22 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Fitzgerald | 15 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Hubert | 30 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Ianders | 27 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Ianders | 25 | B - 10 lbs. | Nisbet | 4/26/71 |
| Stevens | Mero | 40 | B - 10 lbs. | Nisbet | 4/23/71 |
| Stevens | Mero | 60 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Retzlaff | 25 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Smith | 10 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Sprouls | 12 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Stahn (85) | 2 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Stahn (93) | 2 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Strubbe | 74 | A - 10 lbs. | Sharecrop | Spring |
| Stevens | Strubbe | 6 | B - 10 lbs. | Nisbet | 4/23/71 |
| Swift | Miller | 55 | A - 10 lbs. | Sharecrop | Spring |
| Swift | Miller | 15 | B - 10 lbs. | Nisbet | 4/14/71 |
| Swift | Parson | 225 | A - 10 lbs. | Sharecrop | Spring |

TOTAL ACRES

1241

Key: Mixture A - Switch 2 lbs., Sand Drop 2 lbs., Green Needle 1 lb.,
Alfalfa 5 lbs.
Mixture B - 1 lb. each Big Bluestem, Little Bluestem, Switch-
grass, Side Oats Grass, Buffalograss, Sand Drop,
Green Needlegrass, Alfalfa & 2 lbs. Indian Grass.

Care is being exercised to place food plots only where suitable cropland exists and where other cover is well represented.

D. Collections and Receipts

1. Building Disposal

Surplus real property was disposed of in February. Four building sites were involved including 19 structures. Bidding was active with 19 bids received. Receipts totaled \$1367.50.

A total of 166 structures have been sold by this office during the past 7 years for total receipts of \$18,624.22.

E. Control of Vegetation

Weed control was necessary on 178 separate sites in 1971. Total acreage mowed, sprayed or swathed was 3474.3. Control activities were delayed as long into July as possible to avoid nesting disturbances and still get reasonable control results. Canada thistle, sow thistle and leafy spurge were the most serious weed pests.

It appears that the future of both our acquisition and management programs in Minnesota rests at least in part on our weed control activities. State laws are quite severe with regard to the necessity of weed control on all land and an extensive hierarchy has been well established for years to police the situation. A lot of legal and neighborly attention is focused on the manner of our management activities.

A complete summary of weed control activities may be found on NR-12 at the end of this report. The form has been adapted slightly to include all weed control, not just chemical applications.

IV. RESOURCE MANAGEMENT

A. Grazing

The Wetlands Program has moved toward de-emphasizing grazing. Economic and biological management factors are the reasons for this trend. In this district, grazing privileges were granted on six management units this year, while there were eight the previous year. Grazing was deferred on three more units at the close of the 1971 season. The permittees were given advance notices of this action. Two more permittees were notified that grazing would be discontinued after 1972. No adverse criticism has been received as a result of this action. Only the Bakalyar, Elder and Ewen Units will be available for grazing in 1972.

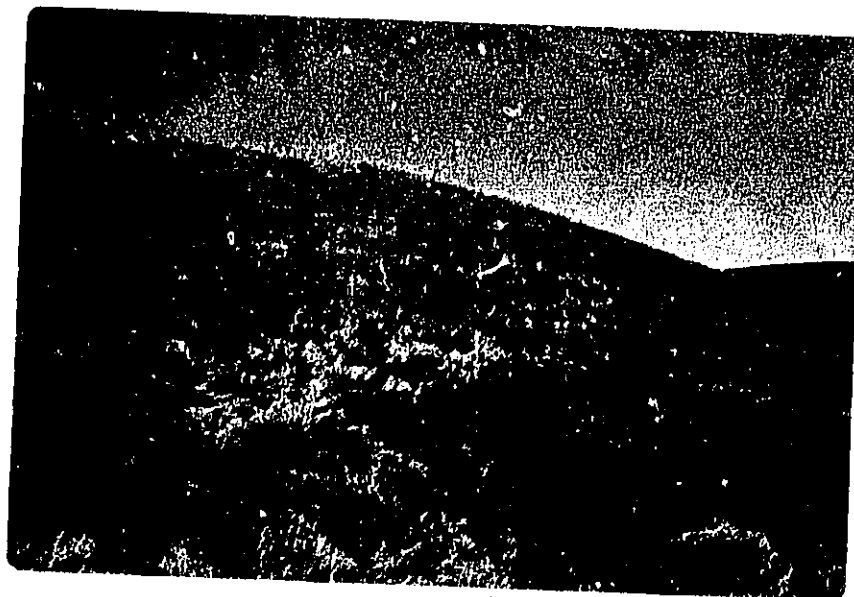
TABLE XI

1971 GRAZING PROGRAM

| Management Unit & Count | Acres Gross | Total AUM's | Date of Use | Revenue Collected* |
|----------------------------|----------------|----------------|----------------|-----------------------|
| Bakalyar (2), Cottonwood | 105 | 49.50 | 5/15-9/30/71 | \$123.75 |
| Elder (19), Pope | 162 | 90.00 | 5/15-9/30/71 | 225.00 |
| Ewen (3), Jackson | 136 | 81.00 | 5/15-9/30/71 | 202.50 |
| Freese (4), Kandiyohi | 120 | 65.25 | 5/15-9/30/71 | 163.12 |
| Gjerdingen (5), Pope | 45 | 22.50 | 5/15-9/30/71 | 56.25 |
| Welsh (4), Swift | 260 | 72.00 | 5/15-9/30/71 | 180.00 |
| 1971 TOTALS (6**) | <u>828</u> | <u>380.25</u> | | <u>950.62</u> |
| 1970 Totals (8**) | <u>1125</u> | <u>590.0</u> | | <u>\$1,180.00</u> |
| 1969 Totals (10**) | <u>1236</u> | <u>650.0</u> | | <u>\$1,300.00</u> |
| 1968 Totals (8**) | <u>878</u> | <u>518.25</u> | | <u>\$1,036.50</u> |
| 1967 Totals (12**) | <u>1199</u> | <u>703.0</u> | | <u>\$1,406.00</u> |
| 1966 Totals (7**) | <u>804</u> | <u>428.0</u> | | <u>\$856.00</u> |

* @ \$2.50/AUM

** Total Permitttees



Native grasses, such as this little bluestem, often return
by themselves after land is retired from grazing.

71, Slide, 10-6, J.J.H.

Table XI shows the extent of our 1971 grazing program as well as totals for 1966-1970. The grazing fee was increased from \$2.00 to \$2.50 per AUM this year. Also, the grazing period was reduced in 1971 from 5/1 - 9/30 to increase wildlife cover. Two past permittees were not interested in continued grazing because of these changes.

B. Haying

A hayland management program has never been initiated in the Benson District. The only exception would be haying used as a tool for weed control. The destruction of habitat and setting of precedences are the main factors against haying. Tame and native haylands are retired to allow for maximum nesting and escape cover development as well as native grass invasion.

C. Fur Harvest

Interest in trapping on Waterfowl Production Areas appears to have remained stable over the past year. The many variables and dispersion of WPA units over a wide area makes it difficult to acquire realistic data on the status of the fur resource. Local trappers claim that harvest success is up for muskrats and mink over 1970 but down for fox. This gives an indication of the population trends. Fur prices are equal or better this year with fox bringing up to \$15.00, raccoon \$6.00, mink \$12.00-\$14.00 and muskrats \$1.10. The premium price paid for fox pelts has kept interest in fox trapping at a high level.

D. Other Resources

The few bee keepers located within the district continue to show interest in operating apiaries on our WPAs. WPAs offer good yard sites, an abundant pollen supply and exclusion from disturbances. Honey bee use is definitely beneficial by aiding in pollination. However, the establishment of new bee yards has been scrutinized very closely for management conflicts. Bee keepers could locate their apiaries on adjacent private lands and still make use of the vegetation on WPAs.

In 1970, two permits were renewed covering three apiaries. Apiaries under permits were located on the Paulsen Unit in Pope County, Wetherell Unit in Swift County and Rodak Unit in Kandiyohi County.

V. FIELD INVESTIGATIONS OR APPLIED RESEARCH

A. Wildlife Management Studies

The Nest Cover Width Study, and the Evaluation of Waterfowl Production Areas are the two studies now in progress in the Benson District. Studies on the effect of reduced agricultural operations on waterfowl production, and waterfowl cover preference, are under consideration.

1. Cooperative Nest Cover Width Study

This wildlife management study is being conducted in the Benson District, several refuges, and other wetland districts, as a cooperative effort. The area biologist heads the project with responsibilities for research and supervision. Research assistance is being supplied by the Northern Prairie Wildlife Research Center. The objectives of this study are as follows:

Primary

- 1) To compare dummy nest survival rates in different cover block widths.
- 2) To compare natural nest densities in different cover block widths.
- 3) To compare natural nest survival rates in different cover block widths.

Secondary

- 4) In some samples, to compare the relative attractiveness of different cover types and cover densities.
- 5) To compare dummy nest and natural nest survival rates.
- 6) To determine the efficiency of the flushing device used, and of the search after haying.

In 1970 we postponed this study due to difficulties encountered in site preparation. This year we continued with the second year of the dummy nest phase of the study.

On June 6th, the area surrounding the study plots was prepared by mowing. On June 15th, dummy nest locations were established at 66 foot intervals, and 42 chicken eggs were placed with a 16' pole. A 21 day exposure period was used. On July 6th results of the exposure period were tabulated.

An abstract for the overall study is not available at this time. Results of the Benson District study indicated the following:

- 1) Survival successes on the blocks were: 83% survival on the 33 foot wide block; 100% survival on the 99 foot wide block; 91.6% survival on the 165 foot wide block; 91.6% survival on the 330 foot wide block.

- 2) The cover quality on the study area was generally poor, but survival surprisingly high.
- 3) The only eggs destroyed during the exposure period appeared lost as a result of gopher digging rather than actual predation.
- 4) Only one natural nest was located in the area and this was about 100 feet from the study plot. It appeared successful.

2. Evaluation of Waterfowl Production Areas

Preliminary work continues on this study. Guidelines have not yet been finalized by the area biologist and each station is proceeding on its own recognizance. Hopefully continued periodic intensive surveys of sample units will show the effectiveness of various management tools. In the Benson District, nine vastly diversified waterfowl production areas have been chosen for evaluation. These units vary in size, composition, and geographical location. Some have or will have extensive development. Others will remain basically as purchased with the exception of the discontinuation of agricultural practices.

The evaluation involves an inventory of all wildlife use and indications, as well as vegetative and marsh conditions. At the onset of this study we attempted to evaluate each unit three times a year. But due to excessive vegetation and poor visibility at production time, (July, August) we are now evaluating at breeding time and in the winter only. At present, the nine study areas in the Benson District have been evaluated four times. Photographs were taken when possible to show vegetative cover, water and marsh conditions, unusual flora, etc. Winter evaluations are taken using snowshoes, rather than a snowmobile, to minimize wildlife disturbance.

This study will be of long duration with no probable termination. Units will continue to change over the years. If some basic criteria for management do's and don'ts can be established, this study will be well worth while.

B. Informal Biological Activities

1. Banding

Mourning doves are abundant throughout the Benson Wetland District. Weather conditions, agricultural practices, and many farm groves tend to encourage a contented dove population. Ideal trapping sites exist within a short

distance of this station. Since the beginning of our dove-banding program in 1968, we have been able to band 3,070 doves. In the past we have used as many as six different trapping sites. This year we used only two, concentrating our efforts on the Jasper Ladd farm south of Benson. A few birds were trapped at John Hutchinson's farm, but the Ladd farm proved much more productive and all traps were moved to this location. Mr. Ladd raises corn exclusively and prepares his ground with "Atrazine" to eliminate forbs, as a result he creates ideal, sandy, trapping pads.

Pre-baiting was started on July 2. On July 12th banding commenced using twenty Kniffen type traps set in groups of three or more. Red Proso Millet was used for bait. Traps were checked two or three times a day. On August 3rd banding was discontinued with 1037 doves banded. Twenty juvenile doves were banded with "Reward" bands in addition to the standard band. The "Reward" bands were used in cooperation with the Minnesota Department of Natural Resources. We feel more doves could have been banded if an early harvest of small grain had not occurred, thus scattering the doves to the harvested fields.

Predators including a stray labrador retriever, sparrow hawks, fox, red-tailed hawk, cats, and skunks were responsible for the loss of 34 birds. Flickers, blue jays, meadow larks, cowbirds, grackles, blackbirds, and striped ground squirrels were constant pan-handlers at the traps. Most bothersome were cowbirds. They would attack the doves by pecking them on the back of the head. One such dove had to be destroyed, while many took on the appearance of a monk.

Band returns continue to accumulate. So far this year we have received these reports:

Minnesota - 8, Kansas - 1, Texas - 13,
Louisiana - 2, Mississippi - 1, Georgia - 1,
Florida - 2, Mexico - 13, and Guatemala - 1.

The following is a short synopsis of banding results and costs for 1971.

| | |
|---|------|
| Banding period - July 12 - August 3 (23 days) | |
| Total No. of Doves Banded | 1037 |
| Doves Re-trapped, Banded 1969 | 12 |
| Doves Re-trapped, Banded 1970 | 45 |
| Doves Re-trapped, Other Banders | 3 |
| For cost breakdown, Total No. Trapped | 1097 |
| Total No. of 1971 Doves Re-trapped | 348 |
| Total Doves Trapped | 1445 |

| | |
|---|--------------|
| Total Lost to Predation | 34 |
| Cost (Actual) | |
| 88.5 hrs. labor @ \$4.11 | \$363.70 |
| Including prebaiting, trapping, banding, removal of traps and compiling data. | |
| Transportation, $\frac{1}{2}$ ton pickup | |
| 654 miles @ 11 M.P.G. = 59 gal. | |
| @ \$.36/gal. | 21.24 |
| Bait - 450# Red Proso Millet | <u>N.C.</u> |
| | \$384.94 |
| Cost per dove \$.35 | |
| Cost (Including Vol. Time & Bait) | |
| 125 hrs. labor @ \$4.11 | \$513.75 |
| Transportation | 21.24 |
| Bait 450# Red Proso Millet | |
| @ \$.045/lb. | <u>29.25</u> |
| | \$555.24 |
| Cost per dove \$.51 | |

Banding run - Approx. 10 miles, 2 sites.
 Average No. birds per day = 47.5
 Most birds in one day = 75
 Evening check was most productive.

2. Pothole Blasting

Five new blasted potholes were added to the district this year, bringing the total to 33. This technique of habitat improvement is being evaluated for effectiveness on waterfowl production areas, and to establish demonstration sites for future reference and public relations purposes.

Ten potholes were blasted in 1966. An additional 18 were created in 1967. This year four new potholes were put on the Christenson Unit in Kandiyohi County. The potholes this year varied in size and shape; 1 - "Y" shaped, 1200 sq. ft.; 1 - half moon shaped, 800 sq. ft.; 1 - straight, 1200 sq. ft.; and 1 - "Y" shaped, 500 sq. ft. It is believed that the irregular shapes will be more attractive to waterfowl.

Another pond, a "do-mit" was blasted on our Lynch Lake Unit in Swift County. This pond has a center island of about 50' and a surrounding channel of approximately 20 ft. in width. This pond was created for a cost of \$170.00 and was placed in an area proposed for future environmental education, demonstrations and tours.

An intensive inspection and evaluation of our potholes is tentatively scheduled in 1972.

3. Clear Cutting

An experimental clear cutting project was started in the district this year with the aid of several sportsmans clubs. The object of the project is to determine the effect of clear cutting in aspen stands, on grouse and deer populations.

Three sportsmans clubs, Lake Johanna, Terrace and Willmar, participated in this project. From February through April these clubs cut five, $\frac{1}{2}$ to 1 acre plots in timber stands, on five units known to have resident deer and grouse populations. It is too early to determine results or benefits from this practice, but by September of this year dense sprouting to five feet has occurred on all sites.



Clear Cutting Project on Paulson Unit, Pope County, at time of cutting.

71, Slide, 4-22, J.C.W.



Clear Cutting Project on Paulson Unit, Pope County,
four months after cutting, showing re-growth.
71, Slide, 8-19, J.C.W.

VI. EASEMENT ADMINISTRATION

Easement administration this year was accomplished by station personnel on a ground check system. Staff members en route to and from various projects throughout the district visually inspected as many easements as possible. No violations were noted.

Excessive fall moisture conditions over most of the area were not conducive to burning or draining. This eliminated or substantially reduced the potential for violation. Hopefully with adequate funds and available time next year we will again be able to use the bureau plane and properly survey all 379 easements in the Benson District.

VII. PUBLIC RELATIONS

A. Recreational Uses

In an era when people are seeking open space because of crowded city conditions and other environmental concerns our WPAs are becoming even more attractive. It is quite obvious that recreational-interpretative use of the wetlands is increasing. Table XII reflects recreational use figures for the year.



Native grass display established at Headquarters site.
71, Slide, 9-17, J.C.W.



Fishing pressure on Spirit Lake WPA.
71, Slide, 6-17, J.C.W.

The Waterfowl Production Areas were used by many individuals and groups throughout the year. Although limited, fishing activities were very pronounced on the Severson and Spirit Lake Units in Jackson County. One summer day 65 fishermen were observed using the Spirit Lake Unit. Hunting remains the dominant use. The Allen Unit was used in September for a Boy Scout camporee involving 150 boys. Also, a group of 150 Benson 3rd graders made use of the Stack Unit for interpretative purposes.

With objectives and program scheduling completed under the new systems approach, the need for additional interpretative and recreational facilities and controls are very evident. The Froland Nature Trail, the first for this district, is all but complete and ready for implementation in 1972. Parking lots constructed on 13 units during the last two years have been well accepted by the public. A native grass demonstration plot established at the Headquarters site will add interpretative values at the office complex.

A positive approach has been taken to snowmobile use which before now has been occurring excessively on an illegal basis. Use of the Allen and Carlson Lake Units by snowmobiles for crossing, only as part of a trail system, was approved by the Regional Office and covered by permit. This was only the fourth case of authorized snowmobile use for the region, while it remains unauthorized on all other units.

Unauthorized horse trail riding on the Allen Unit in Kandiyohi County became a very real problem. As a result of public demand and a legitimate need, a \$25.00 annual permit was authorized for a horse trail crossing.

B. Wetland Management Office Visitors

The Wetland Management Office was honored by 116 visitors over the previous years total. The total visitation for 1971 was 569, as compared to 453 in 1970, 100 in 1969 and 121 in 1968. A reduction in Wetlands Office activities and an increase in wetland management activities contributed to this growth in visitors.

Routine visitors included members of the Wetlands Office staff, state weed inspectors, the Lang Bros. as landlords, and several MCD officials. Also, several contacts were made with Big Stone Refuge staff to coordinate wetland management responsibilities. Burt Bounds paid a call on July 22nd and Mr. and Mrs. Art Hughlett stopped by on November 5th for orientation purposes. The station was inspected on January 19th and 20th by John Langenbach and on November 10th and 11th by Jim Monnie. Benson High School science classes visited the Headquarters on May 10th and 14th for a tour. Courtesy visits were made by Jim Monnie and Frank Pratt on July 27th and Les Dundas on September 17th and November 4th. Mr. Jim Monnie also visited the station for objective setting.

TABLE XII
Bureau of Sport Fisheries and Wildlife
Division of Wildlife Refuges

29.

ANNUAL
~~MONTHLY~~ RECREATIONAL USE REPORT

Refuge name
Benson Wetland Management District
State
Minnesota

State Code 23 (1-2) Congressional District Code 07 (3-4) Refuge Code 315 (5-7) Report Yr. 71 Mo. 1 Calendar Year 1971 (8-11)

| (Card Columns) (12-13) (14-18) (19-25) | | | | (Card Columns) (12-13) (14-18) (19-25) | | | |
|--|------|----------------------|-------------|--|------|----------------------|-------------|
| ACTIVITY | | VISITS FOR THE MONTH | | ACTIVITY | | VISITS FOR THE MONTH | |
| | Code | Total Number | Total Hours | | Code | Total Number | Total Hours |
| Hunting: | | | | On-Site Programs | 22 | 40 | 2 |
| Big Game | 01 | 1500 | 6000 | *Miscellaneous Wildlife | 23 | 1350 | 1350 |
| Upland Game | 02 | 1950 | 7400 | | | | |
| Waterfowl | 03 | 10000 | 40000 | Swimming | 24 | 0 | 0 |
| Other Migratory | 04 | 125 | 400 | Boating | 25 | 0 | 0 |
| Other | 05 | 3150 | 4400 | Water Skiing | 26 | 0 | 0 |
| Bow | 06 | (1500) | (6000) | Camping | 27 | 0 | 0 |
| Fishing: | | | | Group Camping | 28 | 0 | 0 |
| Salt Water | 07 | 0 | 0 | Picnicking | 29 | 0 | 0 |
| Warm Water | 08 | 600 | 1100 | Horseback Riding | 30 | 520 | 1020 |
| Cold Water | 09 | 0 | 0 | Bicycling | 31 | 0 | 0 |
| Environmental Education | 10 | 1340 | 4070 | Winter Sports | 32 | 1150 | 1250 |
| Wildlife Photography | 11 | 1350 | 1350 | Fruit, Nut and Vegetable Collecting | 33 | 150 | 150 |
| Wildlife Observation | 12 | 20400 | 5525 | *Miscellaneous Non-Wildlife | 34 | 285 | 295 |
| Conducted Programs | 13 | 0 | 0 | Peak Load Day | 35 | 4500 | 0 |
| Field Trials | 14 | 0 | 0 | Actual Visits | 36 | 36525 | 0 |
| Wildlife Trails | 15 | 75 | 75 | | | | |
| Wildlife Tours/Routes | 16 | 0 | 0 | Fee Area Use | 37 | 0 | 0 |
| Visitor Contact Stations | 17 | 0 | 0 | Number of Fee Areas | 38 | (14-18) | |
| Camping (wildlife related) | 18 | 175 | 4200 | Fee Collections | 39 | \$ | |
| Picnicking (wildlife related) | 19 | 575 | 1125 | Collection Costs | 40 | \$ | |
| Wildlife Interpretive Center | 20 | 0 | 0 | | | | |
| On-Site Programs | 21 | (746) | (55) | | | | |

Form 3-123
(Revised July 1969)

*Use reverse side to indicate types of activities summarized under miscellaneous codes 23 and 34. MAKE NO OTHER ENTRIES ON FACE OF THIS FORM.

Code 34 - Rockhounds, Inspections

Commercial Use (Trapping, Permittees, Contractors)
Days Use, Year to Date = 14,950

Days Use, Year to Date = 14,950

C. Participation

TABLE XIII WETLAND MANAGEMENT PARTICIPATION

| Date | Activity, Group and Location | Personnel |
|-----------|---|-----------------|
| 1/71 | Attended Communications Workshop, High Sch., Benson | Staff |
| 1-3/71 | Participated in Reading Dynamics Course, Benson H.S. | Hubert & Womble |
| 1-11 & 12 | Tour of Timber Resource, Bob Johnson, Benson WPA | Womble |
| 1-19 | Meeting w/ Bill Bailey, Starbuck High School | |
| | Conser. Club, Starbuck | Womble |
| 1-21 | Slide Program, Co. Weed & Seed Meeting, Litchfield | Womble |
| 1-27 | Meeting on clear cutting, Terrace & Lake Johanna | |
| | Sportsmans Clubs | Womble |
| 2-11 | Met w/ Madson of C. of E. on Big Stone N.W.R., Benson | Hubert |
| 2-16 | Objectives Workshop, Elk River | Hubert |
| 2-17 | Slide Program, Envir. Science Class, H. S., Benson | Womble |
| 2-24 | Weed Problems Mtg., Co. Commissioners, Willmar | Hubert & Womble |
| 2-25 | Presented Ecology Program, High School, Benson | Hubert |
| 3-3 | Met w/ Hopke & Hooper from Stearns Co., re. policies | Hubert |
| 3-8/11 | Objectives Workshop, Aberdeen | Hubert |
| 3-9 | Minette purchase problem meeting, Sauk Centre | Womble |
| 3-9 | Presented Wetland Program, 4-H Group, Chippewa Co. | Hutchinson |
| 3-13 | Presented program, History & Safety w/ Firearms, Cub Scouts, Benson | Hutchinson |
| 3-21 | Slide program on Bertrand, West Zion Church, Hancock | Womble |
| 3-24 | Dovre Township complaint meeting, officials, Spicer | Womble |
| 3-25 | Met w/ Quade Bros. in Stearns Co., re. Trisko-Under Marsh | Womble |
| 3-30 | Meeting of Hunter Safety Instructors, Benson | Hutchinson |
| 4-1/2 | Systems Workshop, Elk River | Hubert & Womble |
| 4-2/4 | Bureau Exhibit, Sportsmans Show, Willmar | Staff |
| 4-12 | Wetland Program problem meeting, Cong. John Zwack, St. Cloud | Hubert |
| 4-12 | Instructed Hunter Safety Class, H. S., Benson | Hutchinson |
| 4-19 | Instructed Hunter Safety Class, H. S., Benson | Hutchinson |
| 4-20 | Slide program, "Earth Day", H. S., Clara City | Womble |
| 4-26 | Instructed Hunter Safety Class, H. S. Benson | Hutchinson |
| 5-3 | Instructed Hunter Safety Class, H. S., Benson | Hutchinson |
| 5-4 | Presented E.E. program, Grade School, Benson | Hutchinson |
| 5-6 | Tour of W.P.A.s, Lake Andes NWR Staff, Benson | Womble |
| 5-7 | Instructed Hunter Safety Class, Armory, Benson | Hutchinson |
| 5-10 | Conducted tour, H.S. Envir. Science Class, Benson | Womble |
| 5-14 | Conducted tour, H.S. Envir. Science Class, Benson | Womble |
| 5-22 | Hunter Safety Class field trip, Hutchinson farm | Hutchinson |
| 6-9 | Presented ecology program to 115 4-H'ers, Alex. | Hubert |
| 6-14 | Conducted tour of Staack WPA, Grade School, Benson | Hutchinson |
| 6-15 | Met w/ Bob Hofflander, Windom Sr. H.S. re. E. E. | Womble |
| 6-21/23 | Objectives Review, Jim Monnie, Benson | Hubert |
| 6-28 | Presented E.E. program, Grade School, Benson | Hutchinson |

TABLE XIII WETLAND MANAGEMENT PARTICIPATION (Continued)

| | | |
|----------|--|-----------------|
| 6-28 | Conducted tour of Staack WPA, Grade Sch. Benson | Hutchinson |
| 6-30 | Hunter Safety Class, Make-up day, Hutch. Farm | Hutchinson |
| 7-13 | Meeting w/ Co. Hwy. Eng. Kandiyohi Co., Benson | Hubert |
| 7-28 | Resolve Whitney Land Co. conflict, Virgil Kerfeld, Sauk Centre | Hubert |
| 7-28 | Films & talk, underprivileged children, Sibley State Park | Hutchinson |
| 8-5 | Presentation of Hunter Safety Cert., Benson | Hutchinson |
| 8-16 | Met w/ Shott of Chokio Tele. Co., cable burying, Benson | Hubert |
| 8-30/9-1 | Minnesota Managers Meeting, Fergus Falls | Hubert & Womble |
| 9-16 | Hunter Safety Instruc. Workshop, C. H., Benson | Hutchinson |
| 9-29 | Meeting w/ D.N.R. Hoffman & Wojahn re. Sauk River | Hubert |
| 10-5 | County Ditch Hearing, Willmar | Womble |
| 10-8 | Conducted tour of WPA, Grade School, Benson | Hubert & Womble |
| 10-27 | Ditch Hearing, Willmar | Womble |
| 11-2 | Met w/ Virgil Amundson, Lions Club, re. Froland Trail, Starbuck | Hubert |
| 11-9 | Slide program, Cons. Class, Jr. College, Willmar | Womble |
| 11-10/11 | Conducted tour of WPAs for Jim Mommie, Benson WMD | Womble |
| 11-12 | Met w/ Grady Mann. Wetland Coordination, Benson | Hubert |
| 11-15 | Operation Mainstream Crew, Assistance on Froland Trail, Starbuck | Hubert |
| 11-16/19 | Attended PPBE Workshop, Minneapolis | Hubert & Womble |
| 11-29/30 | Objectives Workshop, Fergus Falls | Hubert |
| 12-3 | Meeting on horse & snowmobile use on WPAs, Spicer | Hubert & Womble |
| 12-20 | Coordination Meeting, Wetlands Office, Fergus Falls | Hubert |
| 12-23 | Met w/ Phil Keithahn, Boy Scout Project, Benson | Hubert |

Periodic meetings were conducted with SCS and ASCS officials throughout the year. Jack Womble regularly attended bi-weekly Lions meetings as a director and participated in their community activities. Womble also worked as an adult sponsor for the Christian Youth Fellowship church group. Jim Hubert regularly attended monthly board meetings and weekly luncheons of Kiwanis where he acted as treasurer, and participated in his Church Council activities as president. John Hutchinson assisted with gun handling and training activities.

D. Hunting

Waterfowl Production Areas continue to grow in popularity with area hunters. They are our staunchest supporters. As private lands diminish in quality and availability, pressure increases on our units. The majority of hunting pressure occurs during the waterfowl season, but all types of hunting

are increasing. "Your Guide to Federal Waterfowl Production Areas" has helped promote public interest. About 7,000 of these brochures were distributed to area post offices, sporting goods stores and other outlets this year. A copy may be found on the inside back page of this report.

Waterfowl hunting success varied greatly this year. With few exceptions, the opening weekend proved good on local birds. The fall migration was a little late and seemed to stop about halfway through the district. Open water and inviting corn fields enticed the birds to remain until just before the season end. Locally the hunting was excellent but reports from our southern counties indicated a very poor season in that area. Mallard and blue-wing teal were the predominant species taken. Goose hunting on our units remains light, a few birds being harvested as a bonus to duck hunting. The "Bag Check Summary", Table XIV which follows, reflects the trend of hunter success for the period 1968-1971.

TABLE XIV

BAG CHECK SUMMARY

Benson Wetland Management District

| | 1968 | | 1969 | | 1970 | | 1971 |
|-------------------|-------|---|--------|---|-------|---|-------|
| Hunters Checked : | 130 | : | 161 | : | 96 | : | 86 |
| Coat Checked : | 1 | : | 11 | : | 0 | : | 0 |
| Ducks Checked : | 76 | : | 159 | : | 166 | : | 124 |
| Avg. Ducks/Htr. : | .58 | : | .98 | : | 1.7 | : | 1.4 |
| Ducks Lost/Htr. : | 30/26 | : | 40/144 | : | 13/66 | : | 33/82 |

| Species | No. | % | No. | % | No. | % | No. | % |
|------------|-----|-----|-----|-----|-----|----|-----|-----|
| Mallard | 17 | 22 | 34 | 21 | 38 | 23 | 28 | 23 |
| Black | 3 | 4 | - | - | - | - | - | - |
| Gadwall | 1 | Tr. | 1 | Tr. | - | - | - | - |
| Baldpate | 11 | 14 | 17 | 11 | 16 | 10 | 9 | 7 |
| Pintail | 2 | 3 | 2 | 1 | 7 | 4 | 1 | Tr. |
| G. W. Teal | 19 | 25 | 7 | 4 | 12 | 8 | 22 | 18 |
| B. W. Teal | 12 | 16 | 30 | 18 | 40 | 24 | 49 | 39 |
| Shoveler | - | - | 6 | 4 | 6 | 3 | 2 | 2 |
| Wood Duck | 6 | 8 | 18 | 11 | 15 | 9 | 7 | 6 |
| Red Head | 1 | Tr. | 14 | 9 | 16 | 10 | 3 | 2 |
| Ring Neck | 2 | 3 | 10 | 6 | 9 | 5 | 2 | 2 |
| Sowup | 1 | Tr. | 18 | 11 | 5 | 3 | - | - |
| Canvasback | - | - | 1 | Tr. | 2 | 1 | - | - |
| Mergansers | 1 | Tr. | - | - | - | - | 1 | Tr. |
| Bufflehead | - | - | 1 | Tr. | - | - | - | - |

Pheasant hunting in the district was limited to our two southern counties, Cottonwood and Jackson. Reports indicate success was lower than last year due to poor weather and fewer birds.

The low deer population in the northern part of the state dictated a closed season to firearms in Minnesota this year. A limited archery season was allowed, except in the northeast portion of the state, from October 16th to November 11th. The deer population in our area remained good and a few archers were successful.

Rabbit, fox, and squirrel hunting is increasing in popularity on our units. Some of our eastern areas have small resident grouse populations that receive some hunting pressure.

E. Violations

To our delight, no violation cases were made this year. However, seven warnings were issued during the waterfowl season. All hunters included in the preceding bag check summary were inspected for legal compliance.

A case of illegal horse use was discovered on our Allen Unit. After several investigations, meetings and reports, the problem was resolved by executing a permit restricting use to a crossing only. A positive approach was also taken to snowmobile use by issuing a permit for portions of a trail system to cross two units.

F. Safety

Regular safety meetings were held monthly throughout the year. All staff members participated. Subjects covered were many and varied. Films were shown when available. Safe mowing, safety with power tools, fire extinguisher use, electrical hazards and lifting were some of the subjects covered. Two sessions were held to fulfill the defensive driving refresher requirements.

Special emphasis was placed on safety with seasonal employees. Safe equipment handling, chain saw operation, vehicle safety, and safety clothing were stressed in meetings and on the job.

At the close of work on January 31st, our record stands at 824 days without a lost time injury.

G. Revenue Sharing

Checks covering the refuge revenue sharing payments were again delivered to eleven counties during the month of November. News releases publicizing the payments were conveyed to 14 radio and press outlets. Amounts of payments to counties and a comparison with previous years appears in Table XV.

TABLE XV
PAYMENTS TO COUNTIES

| County | 1968 | 1969 | 1970 | 1971 |
|-----------------|-------------|-------------|-------------|-------------|
| Big Stone | \$1,480.66 | \$4,194.69 | \$5,154.42 | \$6,865.66 |
| Cottonwood | 616.11 | 886.11 | 953.61 | 1,240.86 |
| Jackson | 1,547.17 | 1,547.17 | 1,547.17 | 2,025.32 |
| Kandiyohi | 3,430.94 | 3,928.62 | 4,870.65 | 7,121.58 |
| Lac qui Parle | 1,028.84 | 1,162.45 | 1,177.57 | 2,124.62 |
| Pope | 2,991.38 | 3,588.92 | 4,253.75 | 6,017.11 |
| Stearns | 1,240.02 | 1,240.02 | 1,883.71 | 4,307.12 |
| Stevens | 2,857.41 | 3,526.43 | 4,446.06 | 6,012.94 |
| Swift | 1,536.91 | 2,744.57 | 3,075.70 | 3,694.07 |
| Traverse | 1,264.73 | 1,264.73 | 1,264.73 | 1,961.25 |
| Yellow Medicine | 80.27 | 80.27 | 80.27 | 94.95 |
| TOTAL | \$21,074.44 | \$24,463.98 | \$28,707.64 | \$41,465.48 |

Total since the start of the program (1966-1971) = \$115,412.75

Public reaction has been favorable when the payment procedure is understood. This has generally been the case. However, on some occasions irate and misinformed citizens still present some problems. They claim that loss of tax revenue from federal lands is hurting their individual counties, townships and schools.

VIII. OTHER ITEMS

A. Items of Interest

A total of 1698 pieces of mail (envelopes and/or packages) were received during the year while 1417 were sent out. Included in the outgoing mail were 85 reports, 211 fiscal documents, 7 special use permits and 1114 miscellaneous items. Fee title packages received from the regional office totaled 38 while 3 easements were received.

Important work!

The project of the year was establishing the objectives for the district and plugging them into the National Wildlife Refuge System Objectives. A total of 84,622,000 Refuge Benefit Units were generated in the district in 1971. The 1978 objectives are for a total 119,326,000 RBU's and the no funds increase objectives total 100,802,000 RBU's.

Evonne T. Mikkelsen, Clerk at the Benson Wetland Management Office for nearly four years, was replaced on October 10, 1971, by Inga Mae Unke through a RIF action originating in the Benson Wetlands Acquisition Office.

Duck stamp sales dropped for the fourth straight year at the Benson Post Office. The stamp was priced at \$3.00 throughout the years shown on Table XVI.

TABLE XVI DUCK STAMP SALES - Benson, Minn.

| Year | Amount | Year | Amount |
|------|--------|------|--------|
| 1963 | 283 | 1968 | 411 |
| 1964 | 293 | 1969 | 396 |
| 1965 | 330 | 1970 | 390 |
| 1966 | 420 | 1971 | 311 |
| 1967 | 431 | | |



Staff Photo - Summer Temporaries, L-R Jack Alquist, Rich Wayne, Ross Olson.

71, 6, 9-17, J.C.W.

News releases were issued regularly to 23 press, radio and TV outlets in the district, covering a wide range of subjects. Included were releases on Kiwanis Duck Ponds, Building Sale, Wetlands Aid Flood Control, Leave Wildlife Babies Alone, Dove Banding Successful Again, Federal Public Hunting Areas, Sportsmen Develop Habitat, and Federal Wetland Management Office Remains Open.

Considerable time was spent familiarizing the manager of the new Big Stone Wetland Management District with the district wetlands and management procedures.



Staff Photo - Front L-R, John Hutchinson, Evonne Mikkelsen, Jack Womble. Back L-R, Jim Hubert, Roger Nelson.
71, Slide, 9-71, J.J.H.

Sections I, IV, VII of this report were prepared by Jack Womble. Preparation of sections II, V and VI was completed by John Hutchinson. Jim Hubert prepared sections III and VIII. Credit for the arrangement and typing of this narrative report goes to Inga Mae Ucke.



Staff Photo - Inga Mae Urke. 72, Slide, 1-18, J.J.H.

1-31-72

Date

James J. Hubert
James J. Hubert
Project Leader

FEB 22 1972

Date

/s/ James B. Meemid

Signature (R. O. Approval)

ASST Regional & Local Operations

Title

3-1758
Form W-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Beaver Wetland Management District County Big Stone State Minnesota

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|------------------------------|--------------------------------|----------|------------------------------|-----------|-------------|-----------|-----------------------------|---|------------------|
| | Acres | Bu./Tons | Harvested | | Unharvested | | | | |
| | | | Acres | Bu./ Tons | Acres | Bu. /Tons | | | |
| Cornland Retirement | | | | | | | | | |
| Small Grain/Legume | 124 | | 0 | | 0 | | 124 | 124-Alfalfa cover | 124 |
| Native Grass | 0 | | 0 | | 0 | | 40 | 40-Native Gr. cover | 40 |
| Seed Plot Rotation | | | | | | | | | |
| Corn | 53.2 | | 0 | | 26.8 | | 80 | | 80 |
| Corn/Sweet Clover | 13.2 | | 0 | | 6.8 | | 20 | 20-Sweet Clv. cover | 20 |
| Small Grain/Alfalfa | 30 | | 0 | | 0 | | 30 | 30-Alfalfa cover | 30 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 10-Alfalfa cover | 10 |
| Corn Stubble | 0 | | 0 | | 0 | | 0 | 90-Corn Stubble | 90 |
| Seed Plot | | | | | | | | | |
| Corn | 4 | | 0 | | 2 | | 6 | | 6 |
| | | | | | | | | | |
| | | | | | | | | Fallow Ag. Land. | 10 |

No. of Permittees: Agricultural Operations 14 Haying Operations 0 Grazing Operations 0

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|-------------------------------|----------------|-------|--------------|--|----------------|-------|--------------|---------|
| 0 | | | | 1. Cattle | 0 | 0 | 0 | 0 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 410 |
| Hay - Wild | | | | 2. Acreage Cultivated as Service Operation | | | | 40 |
| 0 | | | | | | | | |

DIRECTIONS FOR PREPARING FORM NR--8!
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Barrow Wetland Management District County Cottonwood State Minnesota

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water-fowl Browsing Crops Type and Kind | Total Acreage |
|---------------------------|-----------------------------|----------|------------------------------|----------|-------------------|----------|-----------------------|---|---------------|
| | Acres | Bu./Tons | Harvested Acres | Bu./Tons | Unharvested Acres | Bu./Tons | | | |
| Cornland, Barrow | 24 | | 0 | | 0 | | 24 | 24-Alfalfa cover | 24 |
| Small Grain/Legume | 4 | | 0 | | 2 | | 6 | 6-Sweet Clv. cover | 6 |
| Red Flax Rotation | 4 | | 0 | | 2 | | 6 | | 6 |
| Corn/Sweet Clover | | | | | | | | | |
| Red Flax | | | | | | | | | |
| Corn | | | | | | | | | |
| | | | | | | | | Fallow Ag. Land. | 7 |

No. of Permittees: Agricultural Operations 3 Haying Operations 0 Grazing Operations 1

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|-------------------------------|----------------|-------|--------------|--|----------------|-------|--------------|---------|
| 0 | | | | 1. Cattle | 33 | 19.5 | \$123.75 | 105 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 43 |
| Hay - Wild | | | | 2. Acreage Cultivated as Service Operation | | | | 0 |

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Lower Wetland Management District County Jackson State Minnesota

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|------------------------------|--------------------------------|----------|------------------------------|-----------|-------------|-----------|-----------------------------|---|------------------|
| | Acres | Bu./Tons | Harvested | | Unharvested | | | | |
| | | | Acres | Bu./ Tons | Acres | Bu. /Tons | | | |
| Seed Plot Rotation | | | | | | | | | |
| Corn | 20 | | 0 | | 10 | | 30 | | 30 |
| Corn/Sweet Clover | 7 | | 0 | | 3 | | 10 | 10-Sweet Clv. cover | 10 |
| Small Grain/Alfalfa | 40 | | 0 | | 0 | | 40 | 10-Alfalfa cover | 40 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 30-Alfalfa cover | 30 |
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No. of Permittees: Agricultural Operations 4 Haying Operations 0 Grazing Operations 1

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|-------------------------------|----------------|-------|--------------|--|----------------|-------|--------------|---------|
| 0 | | | | 1. Cattle | 21* | 81 | \$202.50 | 136 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | *This includes all age classes | | | | |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 110 |
| Hay - Wild | | | | 2. Acreage Cultivated as Service Operation | | | | 0 |
| 0 | | | | | | | | |

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758
Form W-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Pennington Wetland Management District County Kandiyohi State Minnesota

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water-fowl Browsing Crops Type and Kind | Total Acreage |
|----------------------------|-----------------------------|----------|------------------------------|----------|-------------------|----------|-----------------------|---|---------------|
| | Acres | Bu./Tons | Harvested Acres | Bu./Tons | Unharvested Acres | Bu./Tons | | | |
| Overland Planting | | | | | | | | | |
| Small Grain/Legume | 138 | | 0 | | 0 | | 138 | 138-Alfalfa cover | 138 |
| Native Grass | 0 | | 0 | | 0 | | 39 | 39-Native Gr. cover | 39 |
| Food Plot Rotation | | | | | | | | | |
| Corn | 37.2 | | 0 | | 18.8 | | 56 | | 56 |
| Corn/Sweet Clover | 7 | | 0 | | 3 | | 10 | 10-Sweet Clv. cover | 10 |
| Small Grain/Alfalfa | 50 | | 0 | | 0 | | 50 | 50-Alfalfa cover | 50 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 30-Alfalfa cover | 30 |
| Corn Stubble | 0 | | 0 | | 0 | | 0 | 16-Corn Stb. cover | 16 |
| Food Plot | | | | | | | | | |
| Corn | 17.2 | | 0 | | 8.5 | | 26 | | 26 |
| | | | | | | | | Fallow Ag. Land. | 6 |

No. of Permittees: Agricultural Operations 19 Haying Operations 0 Grazing Operations 1

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|-------------------------------|----------------|-------|--------------|------------|----------------------------------|-------|--------------|---------|
| 0 | | | | 1. Cattle | 17* | 65.25 | \$163.12 | 120 |
| | | | | 2. Other | *This includes all age classes | | | 0 |
| | | | | 1. Total | Refuge Acreage Under Cultivation | | | 371 |
| Hay 0 Wild | | | | 2. Acreage | Cultivated as Service Operation | | | 39 |

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758

Form NR-8

(Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Beaumont Wetland Management District County Le Sueur State Minnesota

| Cultivated Crops Grown | Permittee's | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|------------------------------|-----------------|----------|------------------------------|-----------|-------------|-----------|-----------------------------|---|------------------|
| | Share Harvested | | Harvested | | Unharvested | | | | |
| | Acres | Bu./Tons | Acres | Bu./ Tons | Acres | Bu. /Tons | | | |
| Food Plot Rotation | | | | | | | | | |
| Corn | 7 | | 0 | | 3 | | 10 | | 10 |
| Small Grain/Alfalfa | 10 | | 0 | | 0 | | 10 | 10-Alfalfa cover | 10 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 10-Alfalfa cover | 10 |
| Food Plot | | | | | | | | | |
| Corn | 4 | | 0 | | 2 | | 6 | | 6 |
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No. of Permittees: Agricultural Operations 2 Haying Operations 0 Grazing Operations 0

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|----------------------------------|-------------------|-------|--|---|-------------------|-------|-----------------|---------|
| 0 | | | | 1. Cattle | 0 | 0 | 0 | 0 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | |
| Hay - Wild 0 | | | 2. Acreage Cultivated as Service Operation | | | | | 0 |

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758
 Form NR-8
 (Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Benson Wetland Management District County Pope State Minnesota

| Cultivated Crops Grown | Permittee's | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|-------------------------------|-------------|-----------|------------------------------|----------|-------------|-----------|-----------------------------|---|------------------|
| | Share | Harvested | Harvested | | Unharvested | | | | |
| | | | Acres | Bu./Tons | Acres | Bu. /Tons | | | |
| Overland Mowing | | | | | | | | | |
| Small Grain/Legume | 91 | | 0 | | 0 | | 91 | 91-Alfalfa cover | 91 |
| Native Grass | 0 | | 0 | | 0 | | 62 | 62-Native Gr. cover | 62 |
| Food Plot Rotation | | | | | | | | | |
| Corn | 20 | | 0 | | 10 | | 30 | | 30 |
| Corn/Sweet Clover | 10.6 | | 0 | | 5.4 | | 16 | 16-Sweet Clv. cover | 16 |
| Small Grain/Alfalfa | 30 | | 0 | | 0 | | 30 | 30-Alfalfa cover | 30 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 36-Alfalfa cover | 36 |
| Food Plot | | | | | | | | | |
| Corn | 20 | | 0 | | 10 | | 30 | | 30 |
| | | | | | | | | | |
| | | | | | | | | Fallow Ag. Land. | 0 |

No. of Permittees: Agricultural Operations 15 Haying Operations 0 Grazing Operations 2

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|-------------------------------|----------------|-------|--------------|--|----------------|-------|--------------|---------|
| 0 | | | | 1. Cattle | 26 | 112.5 | \$281.25 | 207 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 295 |
| Hay - Wild 0 | | | | 2. Acreage Cultivated as Service Operation | | | | 62 |

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

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 Form NR-8
 (Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Beaumont Wetland Management District County Stearns State Minnesota

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|------------------------------|--------------------------------|----------|------------------------------|-----------|----------------------|-----------|-----------------------------|---|------------------|
| | Acres | Bu./Tons | Harvested Acres | Bu./ Tons | Unharvested Acres | Bu. /Tons | | | |
| Cumland Retirement | | | | | | | | | |
| Small Grain/Legume | 44 | | 0 | | 0 | | 44 | 44-Alfalfa cover | 44 |
| Native Grass | 0 | | 0 | | 0 | | 29 | 29-Native Gr. cover | 29 |
| Head Plot Rotation | | | | | | | | | |
| Corn | 10.6 | | 0 | | 5.4 | | 16 | | 16 |
| Small Grain/Alfalfa | 10 | | 0 | | 0 | | 10 | 10-Alfalfa cover | 10 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 16-Alfalfa cover | 16 |
| Head Plot | | | | | | | | | |
| Corn | 12 | | 0 | | 6 | | 18 | | 18 |
| | | | | | | | | Fallow Ag. Land. | 0 |

No. of Permittees: Agricultural Operations 7 Haying Operations 0 Grazing Operations 0

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|----------------------------------|-------------------|-------|-----------------|--|-------------------|-------|-----------------|---------|
| 0 | | | | 1. Cattle | 0 | 0 | 0 | 0 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 133 |
| Hay - Wild 0 | | | | 2. Acreage Cultivated as Service Operation | | | | 29 |

DIRECTIONS FOR PREPARING FORM NR--8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758
 Form NR-8
 (Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Benson Wetland Management District County Stevens State Minnesota

| State Minnesota | | | | | | | | | |
|------------------------------|--------------------------------|----------|------------------------------|----------|-------------|----------|-----------------------------|---|------------------|
| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
| | Acres | Bu./Tons | Harvested | | Unharvested | | | | |
| | | | Acres | Bu./Tons | Acres | Bu./Tons | | | |
| Cumulated Retirement | | | | | | | | | |
| Small Grain/Legume | 301 | | 0 | | 0 | | 301 | 301-Alfalfa cover | 301 |
| Native Grass | 0 | | 0 | | 0 | | 71 | 71-Native Gr. cover | 71 |
| Food Plot Rotation | | | | | | | | | |
| Corn | 10 | | 0 | | 20 | | 60 | 10-Sweet Clv. cover | 60 |
| Corn/Sweet Clover | 7 | | 0 | | 3 | | 10 | 16-Alfalfa cover | 10 |
| Small Grain/Alfalfa | 16 | | 0 | | 0 | | 16 | 10-Alfalfa cover | 16 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 32-Corn Stb. cover | 10 |
| Corn Stubble | 0 | | 0 | | 0 | | 0 | | 32 |
| Food Plot | | | | | | | | | |
| Corn | 6 | | 0 | | 3 | | 9 | | 9 |
| | | | | | | | | Fallow Ag. Land. | 0 |

No. of Permittees: Agricultural Operations 22 Haying Operations 0 Grazing Operations 0

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|----------------------------------|-------------------|-------|-----------------|--|-------------------|-------|-----------------|---------|
| 0 | | | | 1. Cattle | 0 | 0 | 0 | 0 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 509 |
| Hay - Wild | 0 | | | 2. Acreage Cultivated as Service Operation | | | | 71 |

DIRECTIONS FOR PREPARING FORM NR--8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

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Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

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Form NR-8

(Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Benson Wetland Management District County Swift State Minnesota

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|------------------------------|--------------------------------|----------|------------------------------|-----------|-------------|-----------|-----------------------------|---|------------------|
| | Acres | Bu./Tons | Harvested | | Unharvested | | | | |
| | | | Acres | Bu./ Tons | Acres | Bu. /Tons | | | |
| Cleveland Retirement | | | | | | | | | |
| Small Grain/Legume | 307 | | 0 | | 0 | | 307 | 307-Alfalfa cover | 307 |
| Native Grass | 0 | | 0 | | 0 | | 15 | 15-Native Gr. cover | 15 |
| Red Flot Rotation | | | | | | | | | |
| Corn | 7 | | 0 | | 3 | | 10 | | 10 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 20-Alfalfa cover | 20 |
| Red Flot | | | | | | | | | |
| Corn | 22.6 | | 0 | | 11.4 | | 34 | | 34 |
| Sorghum | 7 | | 0 | | 3 | | 10 | | 10 |
| | | | | | | | | Fallow Ag. Land. | 0 |

No. of Permittees: Agricultural Operations 9 Haying Operations 0 Grazing Operations 1

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|----------------------------------|-------------------|-------|-----------------|--|-------------------|-------|-----------------|---------|
| 0 | | | | 1. Cattle | 16 | 72 | \$180.00 | 260 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 396 |
| Hay 0- Wild | | | | 2. Acreage Cultivated as Service Operation | | | | 15 |

DIRECTIONS FOR PREPARING FORM NR--8¹
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758
 Fo NR-8
 (Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Benson Wetland Management District County Traverse State Minnesota

| Cultivated Crops Grown | Permittee's | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|------------------------------|-----------------|----------|------------------------------|-----------|-------------|-----------|-----------------------------|---|------------------|
| | Share Harvested | | Harvested | | Unharvested | | | | |
| | Acres | Bu./Tons | Acres | Bu./ Tons | Acres | Bu. /Tons | | | |
| Food Plot Rotation | | | | | | | | | |
| Corn | 20 | | 0 | | 10 | | 30 | | 30 |
| Small Grain/Alfalfa | 20 | | 0 | | 0 | | 20 | 20-Alfalfa cover | 20 |
| Alfalfa | 0 | | 0 | | 0 | | 0 | 20-Alfalfa cover | 20 |
| Corn Stubble | 0 | | 0 | | 0 | | 0 | 10-Corn Stb. cover | 10 |
| Food Plot | | | | | | | | | |
| Corn | 4 | | 0 | | 2 | | 6 | | 6 |
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No. of Permittees: Agricultural Operations 4 Haying Operations 0 Grazing Operations 0

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|----------------------------------|-------------------|-------|-----------------|--|-------------------|-------|-----------------|---------|
| 0 | | | | 1. Cattle | 0 | 0 | 0 | 0 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 86 |
| Hay - Wild 0 | | | | 2. Acreage Cultivated as Service Operation | | | | 0 |

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

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Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

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Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758

Form NR-8

(Rev. Jan. 1956)

Fish and Wildlife Service Branch Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge BensonCounty Yellow MedicineState Minnesota

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|------------------------------|--------------------------------|----------|------------------------------|----------|----------------------|----------|-----------------------------|---|------------------|
| | Acres | Bu./Tons | Harvested Acres | Bu./Tons | Unharvested Acres | Bu./Tons | | | |
| | | | | | | | | | 0 |
| | | | | | | | | Fallow Ag. Land. | 0 |

No. of Permittees: Agricultural Operations 0 Haying Operations 0 Grazing Operations 0

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | Grazing | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|----------------------------------|-------------------|-------|-----------------|--|-------------------|-------|-----------------|---------|
| 0 | | | | 1. Cattle | 0 | 0 | 0 | 0 |
| | | | | 2. Other | 0 | 0 | 0 | 0 |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 0 |
| Hay - Wild 0 | | | | 2. Acreage Cultivated as Service Operation | | | | 0 |

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

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Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1979 (NR-12)
(3/63)

-Bureau of Sport Fisheries and Wildlife

-Refuge

ANNUAL REPORT OF PESTICIDE APPLICATION

Benson Wetland Management District

Proposal Number

Reporting Year

1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used AI/Acre | Payor | Cost | Carrier and Rate | Method of Application |
|---|------------------------|--------------------------|---------------------|-----------------------------|-----------|---------|------------------|-----------------------|
| (1) | (2) | Unit (3) County | (4) | (5) | (6) | (7) | (8) | (9) |
| 7/5/71 | Can. Th. | Artichoke Big St. | 24 | MCP-3/4 lb. | Bauer | \$60.00 | \$2.50/ac. | Water Aerial Sp. |
| 7/16/71 | Canada | Artichoke " " | 1 | " " " | FA | | 2 hrs. | Ground Sp. |
| 7/19/71 | Can. Th. | Barry Lake " " | 10 | " " " | Bauer | 25.00 | \$2.50/ac. | Aerial Sp. |
| 7/16/71 | Canada | Barry Lake " " | 1 | " " " | FA | | 2 hrs. | Ground Sp. |
| 7/1/71 | Can. Th. | Bauman " " | 3 | " " " | Bauer | 7.50 | \$2.50/ac. | Aerial Sp. |
| 7/1/71 | " " | Boenke " " | 65 | " " " | " | 162.50 | " " | " " |
| 7/19/71 | " " | Daly " " | 16 | " " " | " | 40.00 | " " | " " |
| 7/5/71 | " " | Dismal " " | 185 | " " " | " | 462.50 | " " | " " |
| 7/1/71 | " " | Geldsmith " " | 3 | " " " | " | 7.50 | " " | " " |
| 7/5/71 | " " | Jacobson " " | 11 | " " " | " | 27.50 | " " | " " |
| 8/16/71 | Canada | Jorgenson " " | 15 | " " " | Jorgenson | 10.00 | \$5.00/hr. | Mowing |
| 7/1/71 | Can. Th. | Jorgenson " " | 80 | MCP-3/4 lb. | Bauer | 200.00 | \$2.50/ac. | Water Aerial Sp. |
| 7/5/71 | " " | Karaly " " | 30 | " " " | " | 75.00 | " " | " " |
| 7/5/71 | " " | Krogerud " " | 4 | " " " | " | 10.00 | " " | " " |
| 7/16/71 | Canada | Krosch " " | 1 | " " " | FA | 4.00 | 3/4 hr. | Ground Sp. |
| 7/9/71 | Can. Th. | Krosch " " | 11 | " " " | Bauer | 27.50 | \$2.50/ac. | Aerial Sp. |
| 7/5/71 | " " | Lindgren L. " " | 3 | " " " | " | 7.50 | " " | " " |
| 7/5/71 | " " | Nelson " " | 26 | " " " | " | 65.00 | " " | " " |
| 7/9/71 | " " | Olsen " " | 18 | " " " | " | 45.00 | " " | " " |
| 7/5/71 | " " | Olsen (S.) " " | 17 | " " " | " | 42.50 | " " | " " |
| 7/5/71 | " " | Persen " " | 9 | " " " | " | 22.50 | " " | " " |
| 10. Summary of results (continue on reverse side, if necessary) | | | | | | | | |
| 7/5/71 | " " | Nothi " " | 17 | " " " | " | 42.50 | " " | " " |
| 7/5/71 | " " | Stegner " " | 10 | " " " | " | 25.00 | " " | " " |
| 8/11/71 | Can., Sow & Snfl. | Swenson " " | 5 | " " " | FA | | 6 hrs. | Mowing |
| 7/2/71 | Can. Th. | Wagner " " | 50 | MCP-3/4 lb. | Bauer | 125.00 | \$2.50/ac. | Water Aerial Sp. |
| 7/16/71 | Canada | Wagner " " | 1 | " " " | FA | 4.00 | 3/4 hr. | Ground Sp. |
| 6/23/71 | " " | Bakalyar Cot. | 12 | " " " | Farm Co. | 30.00 | \$2.50/ac. | Aerial Sp. |
| 6/23/71 | " " | Eckhardt " " | 30 | " " " | " | 75.00 | " " | " " |
| 7/5/71 | " " | Ewert " " | 8 | " " " | Fabst | 28.00 | \$8.00/hr-3 1/2 | Sprayed |
| 6/23/71 | " " | Pankonin " " | 25 | " " " | Farm Co. | 62.50 | \$2.50/ac. | Aerial Sp. |
| 6/23/71 | " " | Thomas " " | 28 | " " " | " | 70.00 | " " | " " |
| | Can. & Sow | Thomas " " | 3 | " " " | Low | 70.00 | \$5/hr/14 hrs.- | Mowed |

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Denson Wetland Management District

Proposal Number

Reporting Year

1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used AI/Acre | Payee | Cost | Carrier and Rate | Method of Application |
|------------------------|------------------------|--------------------------|---------------------|-----------------------------|----------|---------|-----------------------|-----------------------|
| (1) | (2) | Unit (3) County | (4) | (5) | (6) | (7) | (8) | (9) |
| 6/23/71 | Canada | Brooks Jack. | 12 | MCP-3/4 lb. | Farm Co. | \$30.00 | \$2.50/ac. | Aerial Sp. |
| 6/23/71 | " | Kilom " | 96 | " " " | " " | 210.00 | " " | " " |
| 7/13/71 | " | Kilom " | 1 1/2 | " " " | FA | | 3 hrs. | Ground Sp. |
| 6/23/71 | Can. & Sov | Himmelman " | 6 | " " " | Farm Co. | 15.00 | \$2.50/ac. | Aerial Sp. |
| 6/23/71 | Canada | Rasmussen " | 7 | " " " | " " | 17.50 | " " | " " |
| 6/23/71 | Canada | Schwarzen " | 28 | " " " | " " | 70.00 | " " | " " |
| 7/23/71 | " | Schwarzen " | 1 1/2 | " " " | FA | | 1 hr. | Ground Sp. |
| 6/23/71 | " | Haugl " | 8 | " " " | Farm Co. | 20.00 | \$2.50/ac. | Aerial Sp. |
| 6/23/71 | Can. & Sov | Svetson " | 23 | " " " | " " | 57.50 | " " | " " |
| 6/23/71 | Canada | Storn " | 60 | " " " | " " | 150.00 | " " | " " |
| 6/23/71 | " | Wiebner " | 57 | " " " | " " | 112.50 | " " | " " |
| 6/23/71 | " | Wiebner " | 1 | " " " | Bankers | 5.00 | Job Rate | Mixed |
| 7/17/71 | Can. & Sov | Aspen Kandl. | 11 | MCP-3/4 lb. | Sp. Fly. | 29.70 | | Aerial Sp. |
| 7/6/71 | Canada | Bishop " | 1 | " " " | FA | | 2 hrs. | Ground Sp. |
| 7/11/71 | " | Bjur " | 20 | " " " | Sp. Fly. | 54.00 | | Aerial Sp. |
| 7/11/71 | " | Bearse " | 29 | " " " | " " | 78.30 | | " " |
| 6/2/71 | L. Spur. | Bouchier " | 1 1/2 | Tord. Beads | FA | 4.57 | \$3.47/hr. + 5¢/chem. | Cyo. Sdr. |
| 7/6/71 | L. Spur. | Bouchier " | 1 | Tordon | " | | | Granules Spread |
| 7/16 & 22 | Canada | Carley " | 45 | MCP-3/4 lb. | Carley | 112.00 | \$2.50/ac. | Ground Sp. |
| 7/19/71 | " | Carlson Lk. " | 1 | " " " | Wepelien | 10.00 | \$5/hr. - 2 hrs. | Mixed |
| 6/2/71 | L. Spur. | Christensen " | 1 1/2 | Tord. Beads | FA | 5.12 | \$3.47/hr. + 5¢/chem. | Cyo. Sdr. |

10. Summary of results (continue on reverse side, if necessary)

| | | | | | | | | |
|---------|------------|------------|-----|-------------|----------|--------|---------|------------|
| 7/6/71 | Canada | DeGroot " | 2 | | FA | | 4 hrs. | Mixed |
| 7/15/71 | Can. & Sov | DeGroot " | 42 | MCP-3/4 lb. | Sp. Fly. | 113.40 | | Aerial Sp. |
| 7/20/71 | Canada | Dykstra " | .1 | " " " | FA | | | Ground Sp. |
| 7/20/71 | " | Dykstra " | 1/6 | " " " | " " | | 1/2 hr. | " " |
| 7/14/71 | Can. & Sov | Edickson " | 26 | " " " | Sp. Fly. | 70.20 | | Aerial Sp. |
| 7/6/71 | Canada | Edickson " | 1 | " " " | FA | | 1 hr. | Ground Sp. |
| 7/16/71 | Can. & Sov | Branson " | 98 | " " " | Sp. Fly. | 264.60 | | Aerial Sp. |
| 7/12/71 | Can. & Sov | Fischer " | 105 | " " " | " " | 283.50 | | " " |
| 7/12/71 | " " " | Flann " | 76 | " " " | " " | 205.20 | | " " |

3-1979 (NR-12)
(9/68)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Benson Wetland Management District

Proposal Number

Reporting Year

1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used AI/Acre | Payee (6) Cost | Application Rate Remarks | Carrier and Rate | Method of Application |
|---|------------------------|--------------------------|---------------------|-----------------------------|-----------------|-----------------------------|------------------|-----------------------|
| (1) | (2) | Unit (3) County | (4) | (5) | (6) | (7) | (8) | (9) |
| 7/6/71 | Canada | Flamm | 1 | MCP-3/4 lb. | FA | 1 hr. | Water | Ground Sp. |
| 8/23/71 | " | Freese | 1 | " " " | Imdahl \$7.50 | \$5.00/hr. | " " " | Mowing |
| 7/16/71 | Can. & Sew | Hedak | 25 | MCP-3/4 lb. | Sp. Fly. 67.50 | " | Water | Aerial Sp. |
| 7/6/71 | Canada | Hedak | .5 | " " " | FA | 1/2 hr. | " | Ground Sp. |
| 7/20/71 | " | Harvey Lk. | 10 | " " " | " | " | " | Mowed |
| 7/20/71 | " | Harvey Lk. | 14 | " " " | " | 15 1/2 hrs. | " | " |
| 7/15/71 | Can. & Sew | Olsen Lk. | 95 | MCP-3/4 lb. | Sp. Fly. 256.50 | " | Water | Aerial Sp. |
| 7/6/71 | Canada | Olsen Lk. | 2.5 | " " " | FA | " | " | Ground Sp. |
| 7/6/71 | " | Olsen Lk. | 15 | " " " | " | 12 hrs. | " | Mowed |
| 7/6/71 | " | Peterson (W) | 1 | MCP-3/4 lb. | " | 1 1/2 hrs. | Water | Ground Sp. |
| 7/6/71 | " | Quinn | 1 | " " " | " | 1 hr. | " | " |
| 7/15/71 | Can. & Sew | Quinn | 95 | " " " | Sp. Fly. 256.50 | " | " | Aerial Sp. |
| 7/15/71 | " " " | Ranbow | 74 | " " " | " " 199.80 | " | " | " |
| 7/6/71 | Canada | Ranbow | .5 | " " " | FA | 1 hr. | " | Ground Sp. |
| 7/15/71 | Can. & Sew | Reynolds | 8 | " " " | Sp. Fly. 21.60 | " | " | Aerial Sp. |
| 7/14/71 | Can. & Sew | Schmeler | 3 | MCP | Schmeler 20.00 | Job Rate | " | Ground Sp. |
| 7/6/71 | Canada | Sonstegard | 1 | MCP-3/4 lb. | FA | 2 hrs. | " | " |
| 8/27/71 | " | Sperry Lk. | 2 | " " " | Kalkbr. 7.50 | \$5.00/hr. | " | Mowing |
| 7/16/71 | " | Swanson | 14 | MCP-3/4 lb. | Sp. Fly. 37.80 | " | Water | Aerial Sp. |
| 7/6/71 | Can. & Sew | Thorn | 3 | " " " | FA | 3 hrs. | " | Ground Sp. |
| 7/6/71 | Canada | Zwicker | 1 | " " " | " | 1 1/2 hrs. | " | " |
| 10. Summary of results (continue on reverse side, if necessary) | | | | | | | | |
| 7/16/71 | Canada | Zwicker | 4 | " " " | Sp. Fly. 10.80 | " | " | Aerial Sp. |
| 7/7/71 | Can. Th. | Colbert | 16 | " " " | Bauer 40.00 | \$2.50/ac. | " | " |
| 7/7/71 | " | Helson | 38 | " " " | " 95.00 | " | " | " |
| 8/19/71 | Can. & Sew | Overby | 2 | " " " | LA | 2 hrs. | " | Mowing |
| 7/7/71 | Can. Th. | Sumner | 20 | MCP-3/4 lb. | Bauer 50.00 | \$2.50/ac. | Water | Aerial Sp. |
| 8/19/71 | Can. & Sew | Taylor | 10 | " " " | FA | 6 hrs. | " | Mowing |
| 7/20/71 | " " " | Aal | 2 | MCP-3/4 lb. | Sp. Fly. 5.40 | " | Water | Aerial Sp. |
| 7/20/71 | " " " | Ann Lake | 9 | " " " | " " 24.30 | " | " | " |
| 7/20/71 | " " " | Berglund | 13 | " " " | " " 35.10 | " | " | " |
| 7/20/71 | " " " | Bredberg | 19 | " " " | " " 51.30 | " | " | " |

3-1970 (NR-12)
(9/68)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge

Benson Wetland Management District

Proposal Number

Reporting Year

1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used AI/Acre | Payee (6) | Cost | Carrier and Rate | Method of Application |
|------------------------|------------------------|--------------------------|---------------------|-----------------------------|------------------|---------------|------------------|-----------------------|
| (1) | (2) | Unit (3) County | (4) | (5) | (6) | (7) | (8) | (9) |
| 6/10/71 | L. Spurr. | Elder Pope | 2 | Tordon Gr. | FA | 4 hr-175# ch. | - - | Spread |
| 7/20/71 | Canada | Evjen " | 1 | MCP-3/4 lb. | " | 1 hr. | Water | Ground Sp. |
| 7/20/71 | Can. & Sow | Froiland " | 6 | " " " | Sp. Fly. \$16.20 | | " | Aerial Sp. |
| 7/8/71 | Canada | Gardner " | 1 | " " " | FA | 1 1/2 hr. | " | Ground Sp. |
| 7/20/71 | Can. & Sow | Greiner " | 4 | " " " | Sp. Fly. 10.80 | | " | Aerial Sp. |
| 6/9/71 | L. Spurr. | Greiner " | 5 | Tordon Gr. | FA | 200# chem. | - - | Spread |
| 7/20/71 | Can. & Sow | Gullickson " | 9 | MCP-3/4 lb. | Sp. Fly. 24.30 | | Water | Aerial Sp. |
| 8/12/71 | " " " | Gullickson " | 5 | " " " | Gullickson | \$2.00/hr. | - - | Mowing |
| 7/21/71 | Canada | Hagen " | 3 | MCP-3/4 lb. | Sp. Fly. 8.10 | | Water | Aerial Sp. |
| 7/20/71 | Can. & Sow | Jackson " | 9 | " " " | " " 24.30 | | " | " " |
| 7/20/71 | " " " | Jordan " | 25 | " " " | " " 67.50 | | " | " " |
| 7/8/71 | Canada | Jordan " | 1 1/2 | " " " | FA | 1 hr. | " | Ground Sp. |
| 7/20/71 | Can. & Sow | Jorgenson " | 2 | " " " | Sp. Fly. 5.40 | | " | Aerial Sp. |
| 7/20/71 | " " " | Mattson " | 39 | " " " | " " 105.30 | | " | " " |
| 7/21/71 | " " " | Moen " | 43 | " " " | " " 116.10 | | " | " " |
| 7/20/71 | " " " | Murphy " | 16 | " " " | " " 43.20 | | " | " " |
| 7/20/71 | Canada | Nelson " | 10 | " " " | " " 27.00 | | " | " " |
| 7/20/71 | Can. & Sow | Rustad " | 5 | " " " | " " 13.50 | | " | " " |
| 7/8/71 | Canada | Rustad " | 1 | " " " | FA | 1 hr. | " | Ground Sp. |
| 8/2/71 | " | Rustad " | 1 | - - - | " | 1/2 hr. | - - | Mowing |
| 8/9/71 | Can. & Sow | Rustad " | 1 | - - - | " | 1 hr. | - - | " |

10. Summary of results (continue on reverse side, if necessary)

| | | | | | | | | |
|---------|---------------|------------------|-----|-------------|-----------------|-----------|-------|------------|
| 7/21/71 | " " " | Solvie " | 17 | MCP-3/4 lb. | Sp. Fly. 45.90 | | Water | Aerial Sp. |
| 7/20/71 | " " " | Stanner " | 28 | " " " | " " 75.60 | | " | " " |
| 8/2/71 | Canada | Stanner " | 5 | - - - | FA | 1 1/2 hr. | - - | Mowing |
| 8/9/71 | Can. & Sow | Stanner " | 1 | - - - | " | 1 hr. | - - | " |
| 7/8/71 | Can. & Hemp | Stenerson L. " | 1 | MCP-3/4 lb. | " | 1 hr. | Water | Ground Sp. |
| 7/8/71 | Can. & Sunfl. | Sylvester " | 1/6 | " " " | " | 1/2 hr. | " | " " |
| 7/20/71 | Canada | Thone " | 1 | " " " | " | 1 hr. | " | " " |
| 7/20/71 | Can. & Sow | Thone " | 54 | " " " | Sp. Fly. 115.80 | | " | Aerial Sp. |
| 7/21/71 | Canada | Willhite " | 1 | " " " | " " 2.70 | | " | " " |
| 7/19/71 | H. Aly. | Costello Stearns | 30 | " " " | " " 81.00 | | " | " " |

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Benson Wetland Management District

Proposal Number

Reporting Year

1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used | Rate | Carrier and Rate | Method of Application |
|------------------------|------------------------|--------------------------|---------------------|------------------|-------------------|------------------|-----------------------|
| (1) | (2) | Unit (3) County | (4) | AI/Acre (5) | Per Acre (6) Cost | (7) | (8) |
| 7/21/71 | Canada | Cross. Path. Stearns | 1/3 | MCP-3/4 lb. | FA | 1 1/2 hrs. | Ground Sp. |
| 7/21/71 | " | Damer | 1/3 | " | " | 1 1/2 hrs. | " |
| 7/19/71 | " | Gannett | 70 | " | Sp. Fly. \$189.00 | " | Aerial Sp. |
| 7/19/71 | Can. & Sow | Kenna | 55 | " | " 148.50 | " | " |
| 7/19/71 | Canada | Koepf | 12 | " | " 32.40 | " | " |
| 7/19/71 | " | Spanier | 6 | " | " 16.20 | " | " |
| 7/21/71 | " | Wahseler | 1/3 | " | FA | 1 hr. | Ground Sp. |
| 7/19/71 | " | Whitney L. | 18 | " | Sp. Fly. 48.60 | " | Aerial Sp. |
| 7/20/71 | Can. Th. | Anderson | 9 | " | Bauer | \$2.50/ac. | " |
| 7/16/71 | " | Ruhr | 18 | " | " 45.00 | " | " |
| 7/16/71 | " | DeHall | 30 | " | " 75.00 | " | " |
| 7/9/71 | " | Edwards | 11 | " | " 27.50 | " | " |
| 7/20/71 | Canada | Fitzgerald | 1 1/2 | " | FA | 1 hr. | Mowing |
| 7/19/71 | Can. Th. | Freeman | 14 | MCP-3/4 lb. | Bauer | \$2.50/ac. | Aerial Sp. |
| 7/19/71 | " | Fultz | 18 | " | " 45.00 | " | " |
| 7/15/71 | " | Gordon | 62 | " | " 155.00 | " | " |
| 7/9/71 | " | Gruener | 9 | " | " 22.50 | " | " |
| 7/10/71 | " | Grossman | 30 | " | " 75.00 | " | " |
| 7/9/71 | " | Grote | 6 | " | " 15.00 | " | " |
| 7/19/71 | " | Johnson | 22 | " | " 55.00 | " | " |
| 7/20/71 | " | Parriane | 49 | " | " 122.50 | " | " |

10. Summary of results (continue on reverse side, if necessary)

| | | | | | | | | |
|---------|----------|-----------|-----|-------------|-------|-------------|-------|------------|
| 7/9/71 | " | Joos | 11 | " | " | 27.50 | " | " |
| 6/9/71 | L. Spur. | Joos | .1 | Tordon Gr. | FA | 1 hr-25%ch. | " | " |
| 7/19/71 | Can. Th. | Kill | 6 | MCP-3/4 lb. | Bauer | \$2.50/ac. | Water | Spread |
| 7/16/71 | " | Kapitake | 13 | " | " | 32.50 | " | Aerial Sp. |
| 7/14/71 | " | Lamprecht | 130 | " | " | 325.00 | " | " |
| 7/9/71 | " | Landers | 20 | " | " | 50.00 | " | " |
| 7/15/71 | " | Lee | 25 | " | " | 62.50 | " | " |
| 7/14/71 | " | Moham | 6 | " | " | 15.00 | " | " |
| 7/15/71 | " | Mau | 7 | " | " | 17.50 | " | " |

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(9/63)

Bureau of Sport Fisheries and Wildlife

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Refuge

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INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used AI/Acre | Payee | Cost | Carrier and Rate | Method of Application |
|------------------------|------------------------|--------------------------|---------------------|-----------------------------|----------|---------|------------------|-----------------------|
| (1) | (2) | Unit (3) County | (4) | (5) | (6) | (7) | (8) | (9) |
| 7/15/71 | Can. Th. | Mero Stevens | 32 | MCP-3/4 lb. | Bauer | \$30.00 | \$2.50/ao. | Water Aerial Sp. |
| 7/16/71 | " " | Miller " | 85 | " " " | " | 212.50 | " " | " " " |
| 7/19/71 | " " | Peterson " | 15 | " " " | " | 37.50 | " " | " " " |
| 7/15/71 | " " | Schultz " | 60 | " " " | " | 150.00 | " " | " " " |
| 6/9/71 | L. Spur. | Sherstad Sl. " | 2 1/2 | Tordon Gr. | FA | | 5 hr-100# oh. | Spread |
| 7/20/71 | Canada | Strubbe " | 1 | " " " | FA | | 1 hr. | Mowing |
| 7/16/71 | Can. Th. | Struck " | 34 | MCP-3/4 lb. | Bauer | 85.00 | \$2.50/ao. | Water Aerial Sp. |
| 7/20/71 | Canada | Thorstad " | 1 | " " " | FA | | 2 hrs. | Mowing |
| 7/16/71 | Can. Th. | Wente " | 5 | MCP-3/4 lb. | Bauer | 12.50 | \$2.50/ao. | Water Aerial Sp. |
| 7/15/71 | Canada | Bowman Swift | 1 | " " " | FA | | 1 hr. | Ground Sp. |
| 7/16/71 | " " | Byre " | 1/6 | " " " | " | 2.00 | 1/2 hr. | " " " |
| 6/30/71 | L. Spur. | Compton " | 1 | Tordon Gr. | " | | 25# ohen. | Spread |
| 7/17/71 | Can. & Sow | Gilbertson " | 60 | MCP-3/4 lb. | Sp. Fly. | 162.00 | | Water Aerial Sp. |
| 7/15/71 | " " " | Gilbertson " | 1 | " " " | FA | | 1 hr. | Ground Sp. |
| 7/14/71 | Can. Th. | Lindahl " | 35 | " " " | Bauer | 76.50 | \$2.50/ao. | " Aerial Sp. |
| 6/10 & 14 | L. Spur. | Ignoh Lake " | 6 | Tordon Gr. | FA | | 6 hr-225# oh. | Spread |
| 7/17/71 | Canada | Rice " | 5 | MCP-3/4 lb. | Sp. Fly. | 13.50 | | Water Aerial Sp. |
| 7/16/71 | " " | Spring Lake " | 2 | " " " | FA | 7.50 | 1 1/2 hr. | Ground Sp. |
| 6/10/71 | L. Spur. | Svor " | .1 | Tordon Gr. | " | | 25# ohen. | Spread |
| 6/1/71 | " " | Svor " | 1/2 | Tord. Beads | " | 14.47 | \$3.47/hr.+ oh. | Cyc. Sdr. |
| 7/17/71 | Can. & Sow | Svor " | 70 | MCP-3/4 lb. | Sp. Fly. | 189.00 | | Water Aerial Sp. |

10. Summary of results (continue on reverse side, if necessary)

| | | | | | | | | |
|---------|----------|------------|----------|----|-------|-------|--------|------------|
| 7/17/71 | " " " | Benson | " | 34 | " " " | " | 91.80 | " " " |
| 7/14/71 | Can. Th. | Westhausen | " | 20 | " " " | Bauer | 50.00 | \$2.50/ao. |
| 6/30/71 | " " | O'Neill | Traverse | 40 | " " " | " | 100.00 | \$2.50/ao. |